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THIS ISSUE...

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WIN!

A BLASTEROIDS ARCADE MACHINE

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WIN!

LOTS OF CYBERPUNK GOODIES

Neuromancer-style books, videos and games.
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REGULARS

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In the news this month: amazing Amiga bundles, *Defender Of The Crown* is the first game on CD Rom and US Gold sign Michael Jackson for the game of *Wool Warlock*. Preview side-catch Palace's all singing, all shooting games creation utility for 16-bits (SUSPC), plus *Coaster Plate* and CRL's interactive entertainment package for the Amiga *Bumble*.

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Rob Steel bends his alien mind around Zak McKracken

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Phantom Fighter on the Amiga, *Nemesis II* on MSX, *Top Gun* on Nintendo, what more do you want?

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Let Robin Hogg loose at the ATE show in London and what do you get? Pages of justifiable hyperbole for, among other things, *Operation Thunderbolt*, *Narc*, and *Lost Survivor*.



73 ROBIN HOGG'S PLAYING TIPS

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84 FANTASY GAMES

John Woods gets his games in a twist with *GUARD*.

85 READERPAGE

Have the hi-tech games of today lost their sense of fun? Many old-timers long for the busy, busy days when sitting up all night playing with your "PC" was an unadorned pleasure. What went wrong? Readerpage reveals all.

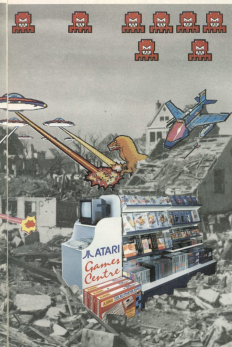
93 CHARTS

If you can classify it, tabularise it and stick it in a box the chances are you'll find it in a TGM chart.



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T G M

Something nasty in the Palace

Outlaw are in for '91 as Palace Software and their Outlaw label line up a string of hostile forces plus a 16-bit Shoot 'Em Up Construction Kit (see box). First off the launchers list comes *Comic Planet*, an action space-opera adventure.

Building single-levels, space tracks and looping routes with the profiles, you'll soon have the chance to become the Lone Lurker of the Milky Way.

Dozens of different missions are offered in the futuristic title from Tiger Games, who've contributed to many console and computer products in the past. Expect ST and Amiga releases in February at £19.95, with CPT, C64 and Spectrum following — all on the Outlaw label, which Palace reserves for games written by freelance programmers.

Also from Outlaw comes *Attending Aural Adventure* — that's only a working title — for the Amiga. Programmed by Thomson Software, the team which did special effects for the latest horror movie *High Spirits*, shows you down in a similarly unpleasant wayward way on an anti-aliased planet.

But there is a moral message hidden among the blasting, booting and an investigation chamber: you could be the first necessary ever in being peace to a warring planet.

Attending Aural Adventure will be on ST and Amiga.

Roll, deal

On the Palace label itself comes steady adventure *Superbird*, by Don Mahan (*Dark Armor* of



In a world of your own: gameplay, graphics and sound can all be created in Outlaw's Shoot 'Em Up Construction Kit (Amiga screen)



Shoot 'Em Up Construction Kit opens can be up to 256x256 pixels, with some different colours (Amiga screen)

Amiga'd.

The horizontal scroller, learning complex handlings, casts the player as a modelled small-scale character, adding the future for all it's worth.

Palace's been working for over

a year on the ST and Amiga versions, and 4-bit should follow. Palace hope for release later this year.

Other games on Palace's menu items include *Master Museum*, an arcade adventure with graphics by

SEUCKing up

Imagine wanting as many shoot-'em-ups as you wanted... and all for the price of a single package. It's possible with Outlaw's *Shoot 'Em Up Construction Kit*, now set for release on ST and Amiga following its highly acclaimed C64 incarnation by Superior Software.

SEUCK, as it's known, is an easy-to-use system for designing graphics, sound and gameplay on the classic shoot-'em-up model. Up to 100 different sprites can be created for each game, each with its own characteristics like strength and frequency.

Backgrounds, weapons and so on are all designed too, at the pixel-by-pixel level — in every SEUCK-created game really can be different.

There's a built-in library of sampled sound effects, and if you have a sampler, SEUCK can sample them too. The package will also import EPP graphics files for 640x480 screens.

SEUCK should be available for Amiga in February and ST later this spring, at £24.95. Details here will be the Amiga version; the ST package should be similar but hasn't been finished yet.

Gary Carr (character) and main programming by Andy Wilson (the story).

And for future shock too there's *Compu* — a public training course of a distant century, with 2000x2000-style comic-book graphics actually created by a comic artist.



Comic Planet: a real-time screen from Outlaw's *Comic Planet*



Comic Planet (Amiga screen)

God simulator from Electronic Arts



Isometric space makes Electronic Arts' *Populous* (EA) sunny

Electronic Arts give you a chance to play god in their major 1st-3rd game in this spring—*Populous*. This creation combines all-day divinity in the American software company, with titles like "house mover" *Populous* and a handful of simulations.

Populous is a new twist on the old colonization theme: two nations, each following a different god, struggle to populate new territories, create cities, eliminate unfriendly threats, then conquer.

As the god of one nation—the other can be the competitor, or a player on another machine—you build cities, create soldiers and use acts of god like earthquakes and floods against the enemy. Hundreds of worlds are available, based on four different landscapes to 3-D details worlds can also be designed from scratch.

As everything's under heavenly control, though—no mountains and giant birds appear randomly to harass both nations.

And another innovative feature of *Populous* is its support for dualists and moderns, allowing you to play at long distances and even against someone on a different screen (the ultimate XT challenge war).

US: *Populous* programming team building recently did *Populous* for the same software house.

Amiga release of *Populous* is set for March and XT for April, both at \$24.95.

Ferrari racing

Meanwhile, back on Earth, Electronic Arts' simulation with cut-scenes with the release of Amiga's *Ferrari Formula One* (an others major brands). The driving team management game simulates a

Ferrari F1 car on its different tracks in a detailed recreation of the 1986 Formula One season.

The XT version is due in March at \$24.95, with Amiga following in April and PC, CPC, and Spectrum all on the cards too.

Also due on the XT is *Style II: The Cyber Conflict*, "simulating" an imaginary world of the future. Besides a new plot, Electronic Arts claims this one has better action and a more realistic flight level than the original *Style*.

The playing area has been enlarged, too, to cover more than 50 screens. Expect XT release in March at \$24.95.

Check up

Also for Spring/Summer, however.

Check *Star's Advanced Flight Trainer*, already available on C64, should be on CPC next in very soon, with Spectrum following in March.

This one, which the company calls *American General Trainer*, says

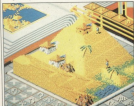
"takes the same factor out of simulating", means the player through three stages of flight training, leading up to formation flying across 8.0 terrain and aerobically obstacle courses.

Also that it's time to tackle sailing.

And for the difficult-to-install, there's also a two-player version, where you can choose from 14 di-



Go race: Electronic Arts' *Ferrari Formula One*, soon for XT release (EA) screen



A whole new world of opportunity: soon to say hello on the hundreds of worlds in Electronic Arts' *Populous* (EA) screen



Bigger and better: Slightly from Electronic Arts, on the ST in black (ST version)

each old and new — ranging from the Sega/MSX Game P-1 to the P-18 or an experimental mode.

■ Just out from Electronic Arts is *Project Phoenix*, a film-style space-

crosser thriller for C64 disk only. Close-ups, fades and more realism add to the atmosphere of the mission set in an out-of-control spacecraft.



Death defying: Chuck Yeager's *Advanced Flight Simulator*, soon from major 8-bit firms (Electronic Arts (PC version))

Lord of the rings for £2.99

The field seems almost empty of big sports titles as software houses scramble to sign them up.

After *Gran Turismo* (Nintendo) came snuggled up Liverpool Football Club for an all-terrific licence sometime this year. Meanwhile, budget house Jappelin

Games aimed at... it's still star Jackie Wilson.

Jackie Wilson's *Dem Challenge* will be an 8-bit budget title. But Jappelin are also moving into full colour with a new label, *Legend*, which this year... for a three-bit prize champion, perhaps?



Jappelin: Jackie Wilson in action. Star Wilson is seated first from right.

Grand slam entertainment

No, they're not trophies for customers — Golden Goddess is the new arm of German software house Rainbow Arts, and they're set to roll over to Britain this April, when US Gold will release satellite sports game *Grand Monster Slam*.

The charmingly ugly sprites and imaginative events of *Grand Monster Slam* had the TGM players going home over heaves with laughter, as they kicked heads across a field in the chaos of minichamp wars. Two subgames provide variety and quality you far higher levels of the main game.



Getting a head: notice the crowd in *Grand Monster Slam*'s main game



Open wide: kick carefully to get the right trajectory in *Grand Monster Slam*'s qualification round



Pole position: pushing 'bombs' aside in *Grand Monster Slam*'s intermediate game



Spitting images: the *Grand Monster Slam* players



When it's dangerous: Jacki throwing in *Circus Attractions*



Roll it up: juggling dangers in *Circus Attractions* include elephants and dynamite

Also coming from Golden Goddess is *Circus Attractions*, following Tynesoft's *Circus Games* and Martech's *Circus*. *Circus* along the suddenly much-used tightrope.

■ The next Rainbow Arts release from US Gold will be *Spherical*, a spell-binding arcade adventure featuring more than 180 levels. C64, Amiga, PC and ST versions are planned.

Alternative go 16-bit

Ferds from last autumn's launch of *Again Again*, *Alternative Software* are going into 16-bit with a couple of titles for ST and Amiga.

Mad Flunky, programmed by Don Priestley, is a humorous arcade adventure set in the Royal household — a 16-bit version of Priestley's 8-bit *Flunky* by the same programmer, released some 18

months ago.

Mad Flunky is on ST only, but Amiga needs serious in *Wingler*, a space puzzle game with 32 levels and 248 screens. (An ST version is also available, of course.)

And also set for 16-bit release is *Mystery Of The Indian Valley* for the ST. All *Alternative*'s 16-bit titles will cost £24.99, substantially over.

UMS sequel

A UMS II is lined up for the console — but it won't be coming from Kallidell, who released the original magazine construction kit. The

serial *Military Simulator* last year, instead the sequel to the highly-acclaimed strategy classic (1988) will be brought by US military.

First CD-ROM game from Cinemaware

Cinemaware have announced the first ever CD-ROM computer game - *Deluge Of The Ocean*.

The emphasis of the CD-ROM version is on sound, with a stereo, fully-synchronized soundtrack, sampled-up effects and spoken dialogue.

But so far the CD-ROM version will run only on PC-compatibility, and of course an expensive CD-ROM drive is required too. The game, which should be out by the time you read this, costs £49.95.

But isn't the first time CD-ROM has been used for games: the PC Engine-console from Japan's NEC, featured next issue, also has an add-on CD-ROM drive.

On the PC Engine, the CD-ROM



Deluge Of The Ocean - long on CD-ROM

storage method - which uses disks like music CDs to hold up to 662MB of data - is used for sound effects and the very long programs of faithful arcade conversions.

(Cinemaware: contact: Marston, Marston House, 66-71 Shaw Lane, London EC4P 4AB ☎ 051 46447)

US Gold get a wacko licence



US Gold's deal this tie-up with Pepsi has really popped up the Birmingham-based software house - because it led them to the licence for Michael Jackson movie-studio-walker. Copyright Jackson is well-known for advertising Pepsi's soft-drinks code.

For his autumn release, the

Michael Jackson going to Gold

game will presumably feature plenty of Jackson tracks, and the movie's narrative theme - there's even a movie-suitable candidate for compensation: that US Gold's last film star - Charlie Chaplin.



The snow game - open are back on winter's tail with The Game - Winter Edition, now available on 16-bit (ST) screen. PUMPO's original version called the game 'true to the 1990 standards' shown in some different (same) games.



At last, here's a classic look 'em-up. (Should) is an for life on all major 8-bit and 16-bit formats, from Virgin Mastertronic.

Using single magic, comic weapons and good old-fashioned wacky, you battle through five missions (10 levels) to find a horde of treasure, magic balls. Detailed graphics, moving talking and some really end-of-level obstacles (there about a huge helicopter full of magic master's) make this a game with punch.

Get your comments: Random Access, who also appear on their previous page with 16-bit, ST, Amiga, CPC and Spectrum versions come from Binary Design. Sadly, no version of a PC version yet. But when you wish upon a star... (M)



Very moving, multidirectional, real-time action in the distinguished feature of clattering about 'em-up. (Should) is an for life on all major 8-bit and 16-bit formats, from Virgin Mastertronic.

War in the Pacific

"Black objects suddenly floated eerily from their wings..." That was a Japanese naval commander's recollection of the US airborne attack at Midway in June 1942, a pivotal victory in America's war against the Japanese.

Now Lucasfilm Games - producers of *Rak McKracken And The Alien Mindbenders*, reviewed by advent-ent columnist Rob Farell this issue - are simulating the air combat of the Pacific War with *Battlehawks 1942*, due for PC release late March or early April. Other 16-bit formats will doubtless follow (both screens here are PC).

Players can take either side in four different battles, and choose from three kinds of plane for each opposing force (fighters, fire bombers and torpedo bombers). Each battle features different missions, and training flights are available too.

Packaged with a beautifully-produced 120-page manual containing colour maps and authentic photos, *Battlehawks 1942* adds a fascinating historical dimension to the writer of flight sims recently released.



Training's over; this is the real thing



City slicker: look out for civilian gang warfare in Virgin Mastercraft's Street Fighting Man (PC/EGA screen; release date not set)

It will also, no doubt, benefit from the publicity given to Japan's Second World War role since Emperor Hirohito's death in January.



Battlehawks 1942: we're sinking 'em!

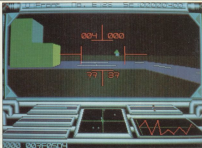
Rocky role

Swiss software house Linel give you a Rocky Balboa for your own home in *The Champ* - though it's not a licence of the movie, this gloriously boxing sim features theme music from the Sylvester Stallone hit!



Rocky in a different way is *Digger*, the latest episode in the life of turn-of-the-century Hebble Stone, the computer character from Crack.

ST and Amiga versions of both are imminent, and PC may follow.



*Solid space: pilot a sophisticated ship through an 8-1 level in Orion's Rift from Crack. Immersion Software's *The Nations* show 'em up (include simple-control video camera in: see beyond the 'translucency' of the screen. Expect ST and Amiga release in March (ST screen)*

Games ghouls play

As software houses bid for the Nightfired license, Andrew Ritten gets to grips with greenmaster Clive Barker

Just when you thought the last nightmare had passed and the final level of events has dropped outside hellholes, another bat out of hell flaps its wings disguised as an innocent blue-eyed boy of 34—Clive Barker.

Before publishers Fantasy Games went his terrible imagination in a £2 million deal, one of the results was *Cabal*, a novella crisscrossed wartime-fight with horror themes like the image of a woman falling in love with a dead man. It was first published, in paperback (£2.95), at the end of January.

Cabal is already on course to be the big screen—moving onto its fourth on the movie, entitled *Nightfired*—and then it's set to stretch its gaily hand into the computer screen.

The film's producers and special-effects company Image Animation have been talking to a few top software houses, including US Gold, and a licence deal should be announced in February. The game will probably be under the name of the film, to avoid confusion with the *Thel* clone up.

The game will be "basically an action-adventure from the movie", says Barker, about man marauding elements—the human beings, cops and the psychopaths. The 19th century monsters who are the shaggy-dog and transformation creatures which have developed from themselves and humans.

And Barker hopes the game will bring his name home to more than the *Black's* pure fantasy of horror fans. In fact, "I would prefer it if people played the game first", he says. "There's a lot of literary stuff and I think we should leave the books on the shelves for people to buy if they want to."

Death dealing

Competition to purchase the game rights came from all directions, and though US Gold approached him first, he's not just out for the best financial offer.

"I want someone positively creative," he says, "who can create a game which is as visually exciting and as complex as possible." And though he confides to being "anti-technological", Barker's well familiar with the video's potential—the brother is a game-designer for Liverpool-based Synopsys.

The player will be the "hero of the night" Boon, whom Death desires. It shifts from him and he ends up not in Heaven, but in hell, not on Earth, but in Hellheim: that awful legendary place which gathered into truth, its monsters reduce the half-dead, the Nightfired.

But just how monstrous can you get? When software launched in 1981, a game of *The First Dead* materialised.

(bringing with it the question of censorship).

"Certainly I think there's got to be [game restrictions]," says Barker. "Censorship opens a whole can of worms. The film censorship lobby has genuine anxieties."

"*Cabal* contains a lot of explicit sex and violence."



Clive Barker can we stomach him?

Barker's technique of opening up the imagination involves subliminal, clean prose, injected with powerful images, that which remains glued within the reader's memory comes from *Cabal*.

Narcosis I got excited, falling like a flesh apple in his hands. Why not? he chuckled. I'm coming around.

"I don't know whether I want to open up that part of the imagination in a ten-year-old," he says. "I don't think it's a good thing for your head minds to be subjected to my stuff. In fact I'm damn sure it's not."

The *Cabal* game designers may find themselves hard-pressed to match the book as its shattering lore—but as a major film licence, it will have huge development funds from whichever software house wins the race. Watch this space.

Tecmo twosome

★Gigantic alien 1-man facility in *Galaxy Wing*—because the copy-cats of this vertically-scrolling shoot 'em up are more lethal than any 2-manbers.

Great battleships, tanks and even fish populate the alien levels of the Tecmo coin-up shooter, highlighted on 10-10 screens by the powerful extended screen (as shown here).

Galactic Biting, like *Galaxian*, may be on the (alien) arc labeler another Export. Availability release on major Atari and Intellivision.



Pls not in *Galaxian*, arc-at and green-fighting-the-ward from the Tecmo coin up. The player can fly the shipper while another takes a long, programming-a-certain. Paraphrase of brown-ripping explosions on the 10-10 screen are seen. The first game from new programming team Brooks Access, *Galaxian* is on for March or April release by development house The Sales Curve—or they may tell it to another label.

TGM REPORT

■ EPYX: YET ANOTHER CONSOLE

American software house Epyx has a cheap new console in development—joining the ever-growing band of games machines which includes the Koinix Multi-System, finally reviewed in this issue of TGM.

Source: at the California-based company have reported for several months that a large section of Epyx's factory has been closed to all but the most trusted employees.

And David Warren, chairman of Epyx and one of the industry's original hardware designers, was said to be involved in the top-secret project.

Now, ever-so-emerging in January's Consumer Electronics Show in Las Vegas suggest that Epyx are planning a handheld console at about £100. No official announcement has been made yet, and the release date is equally unclear.

Sega snatcher

Meanwhile, we forget we can't bring into the full support of the Sega Master System promised this month, is our machine was stolen from British Rail.

Another one in that within weeks, so look out for specs and comments soon. And if anyone offers you a cheap Megadrive, you know where to call...

Coin-op pops

Both in the Mega Megadrive and the Nintendo consoles can now be found in Britain's arcades—as the Mega System and Nintendo Play Choice 10.

On both, your cash buys you a set length of time on the machine, during which you can choose to play on any of the built-in games.

On the Nintendo Play Choice 10, these range from the hard-to-beat chess to a version of the American War, using bits to control of a machine gun to the more traditional, such as tennis and golf.

The Mega System, meanwhile, features eight games: *Adrenal Rush*, *Out Run*, *Manix*, *Space Shuttle 2*, *Super Thunder Blast*, *Great Wolf*, *World War* and *Alien Invasion*.

March debut for MSX2+

There are now plans to release the MSX2+ (TOSHIBA) on European soil—if all goes according to plan, it should be blasting off from the Hammer Computer House, West-Germany, in March.

The 4-bit machine, which comes in three models from Panasonic, Sanyo and Sony, has an advanced specification including a 19,200-colour palette and 11.2x124 resolution.



In the open after months of secrecy: our Koinix Multi-System review, page 16

■ **Long 256KB** MicroCorder technology are growing most ambitious in the console. Starting with a small-scale Epyx computerised world, they finally launched their open-water compatible mini-MSX on December 1st (page 16). MSX2+ has a 256KB ROM and a cabinet will be followed by an enhanced model in summer 1986.

It's unlikely to be hit by, though—MSX are replacing with a number of adding components rather than replacing the whole computer.

A couple of examples in 256KB's range are the popular Model 1 and Model 4 (the second is from Philips and Model 4 is also more likely than the others to be released at around £120. MSX, under the price of components comes down, Epyx's 100 small models by May and high-end chains by August.

■ **FAST work:** The Federation Against Software Theft does not have matched back since £200,000 worth of illegally copied games during 1984. But the majority of the organisation's work will come from removing the last vestiges of business software piracy, of which about 11 million units was recovered last year.

■ **Great get, share about the name:** The Federation of Small Companies (FSC), the new head of the Federation of Small Companies, has a new magazine for up-and-coming business, produced by the same Cambridge-based firm as the *Quarterly* and *Small Business* magazines.

It will be about the playing of short at the 11 (page 16) to other reporting package. For just those that of the very early on as well from 1984, who are publishing and reporting business... and making the situation that computer music (page 16).

■ **Back to the future:** An open keyboard on this device, an interface between electronic modern and an analog model of a computer, is called *Back to the Future*. It will be a 11 (page 16) to other reporting package.

■ **At all, all's in the history and advertising.**

■ **Indirect:** The Advertising Standards Authority (ASA) have ordered down on recent software ads—with the ASA's *Publicity* (100) being produced, among those cited. The ad which featured two young girls sitting at a computer terminal, wearing and competing for in the game, and all the way in the *Indirect* (page 16).

■ **At all, all's in the history and advertising.** The ASA's *Publicity* (100) being produced, among those cited. The ad which featured two young girls sitting at a computer terminal, wearing and competing for in the game, and all the way in the *Indirect* (page 16).

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THE POWER GENERATION

And now for something completely different - a console which makes the leap from little black box to living-room arcade machine. Konix's Multi-System will be in the high streets this autumn at \$149, and TGM was one of the first to test it.

I imagine a cube: a simple wire-frame shape on a screen. Now imagine that on one side a character begins to move around inside, walking across the surface of the cube. Now imagine that you're the focus of your eyes a little higher and notice that on the top side of the cube another figure is moving.

Suddenly, the cube begins to rotate: then faster - and you notice that every side shows a different graphic, some moving, some static. As the cube speeds up, the sensation is like climbing through TV channels at wondrous velocity - one image appears, now another, now another, and though it's moving too fast now to make out clearly what's happening, as the cube approaches strobe speed you can register that you're seeing something new before you're hit with a full-figure graphics recolonisation.

This computer is coming close to real 3-D - rendering screen images as detailed as real-life objects. Only it isn't a computer, not in the keyboard-and-operating-system sense: this is the Konix Multi-System, which will be the first 16-bit console to appear in British shops when it's released this autumn. It is also much more than a console, as the name suggests.

Weird dream

To say the Multi-System looks strange is an understatement, as the pictures on these pages show. And it isn't the physical appearance of this Multi-System, before even the astounding speed of its graphics-handling, that reduced Fleet Street's hardened rep-

INSIDE THE DREAM MACHINE

Graphic genius and the disk-drive trick

The Konix Multi-System may be the first 16-bit console to cross the border from 'coming soon' to 'here now', but eventually its 16-bit pretensions are one of the most striking components.

And this pretension, at least today's chip-tuning of a mere 10MHz, may also be one of the bigger hurdles for Multi-System programmers to jump. However, the 3000 system works on VLSI (very large scale) as found in games systems, so its 16-bit data bus is one of the 32 and larger, and the 3000 will be able to do the processing that really makes a game - it'll simply be sending out more to other chips.

At the heart of the machine are two specialist chips, one for graphics and one for sound, and it's as clear that the system is wired.

Chips for everything

These chips (specialists speak) are custom-made, hand-designed specially for

interactive to dumbstruck amusement when TGM, along with the Guardian and Computer Trade Weekly, was given a special preview last month.

Looking like a solid deal with nano-tensors, the CTM Multi-System - which was previously codenamed the *Diagram* and first revealed in *TECHNICS* - will stand out on the shelves and in the lobbies. That's part of Konix's intention, as the company's founder-Sales Wyn Holloway observes, "we're basing our hopes on the visual rather than the electronic".

But he goes on to make it clear that 'the visual' is much more than the usual blue-and-silver colouring of the shape. "It is not just a square box. It allows the user to be involved in the game, hands-on, with a lot of feedback."

And for once, the term 'hands-on' is no simple cliché. Probably the simplest and most attractive feature of the Multi-System, graphics-handling apart, and which only some of its owners can't shake have had they up (and), is the way it can be adapted and expanded to suit the kind of games you want to use.

First things first, however. Come this autumn, £149 (including VAT) will buy you a Multi-System with a joystick, two games, a 1440-disk drive and a 15-month guarantee - all you need to get up and go. Further games will cost £14.95 each.

But you'll then be able to buy add-on hardware from a light-gal with control to a 640-character pixel lighter as the game takes you 'up', rather in a chair. The Afterburner-style chair, which has been the most remarkable of the Multi-System products, is designed to take both the console itself and a TV. It thus becomes the forward thing yet to an arcade cabinet in your house, as the system was first described to TGM back in September.



THE JAPANESE CONTENDER

The land of the rising sun also means where consoles are conquered — and next month TBM brings Britain's first full reviews of the PC Engine and its leading games.

The top £199.99 console from NEC, which is currently only available on mail-order basis, shows astounding sound and graphics from the 28M capacity of its 1024K cartridges. And with the added power of a CD-ROM drive it looks set to be the Multi-System's purchased opponent.

TBM's in-on sale March 25.

FLARE ■ WERE THERE

"The Flare team are brilliant designers," says Game base. "They follow a lead to call them to work on the Multi-System."

Ever since news of the first project leaked out, Flare's involvement, Cambridge-based Flare Technology had already developed a console, the Flare One (Jaguar), which hasn't seen the light of day yet.

In games were great, but it had some anticipated features, like an 8-bit 280 processor and, hence of course, tape loading.

However, it seems that the Multi-System is not the Flare One. But actually, the Flare team were involved. "We had only been working on it for a year when Flare had been working on their first years. Their knowledge is what we want."

And the Multi-System goes for ahead of the Flare One on graphics, with a better chip three times as fast.

The Multi-System, as they give the console capabilities that can't be found elsewhere — yet.

The graphics chip can produce 8-bit color (just), or even 16-bit color (just), or even 24-bit color (just), or even 32-bit color (just), or even 64-bit color (just), or even 128-bit color (just), or even 256-bit color (just), or even 512-bit color (just), or even 1024-bit color (just), or even 2048-bit color (just), or even 4096-bit color (just), or even 8192-bit color (just), or even 16384-bit color (just), or even 32768-bit color (just), or even 65536-bit color (just), or even 131072-bit color (just), or even 262144-bit color (just), or even 524288-bit color (just), or even 1048576-bit color (just), or even 2097152-bit color (just), or even 4194304-bit color (just), or even 8388608-bit color (just), or even 16777216-bit color (just), or even 33554432-bit color (just), or even 67108864-bit color (just), or even 134217728-bit color (just), or even 268435456-bit color (just), or even 536870912-bit color (just), or even 1073741824-bit color (just), or even 2147483648-bit color (just), or 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Though the number of channels wasn't called when we went to press, Kone engineers have managed to get 15 channels of the monitor — three times more than the Atom System's. Naturally the number on Channel Count will be 45, not 15.

Not no memory?

And here is the big surprise offer of those top-of-the-range specs. The Multi-System has a RAM backing memory of 192 Kbytes, no more than the Spectrum.

Considering that storing the video information for just one high-resolution 640x480 system screen takes as much as 25K, the most likely to get paid is the monitor's multi-looked power. But here another Kone innovation — not quite an innovation — comes in.

The Multi-System has a 3.5-inch 5 $\frac{1}{4}$ " floppy drive that can read data backing up to 192 K of information. As a game disk, it's as fast as the disk drive, so it's an effective upgrade in screen refresh program is running, without slowing things down.

There can be almost continual disk access, giving the machine 192 K to play with at any time. Though at any given time it will only hold the 128 K currently being used.

All programmers need to do is learn how to arrange their code so that the drive feed them's fast to read out the disk for it, searching for the next bit of program.

Keeping it cheap

That 128 Kbyte is not half above the competition — Sega's 16-bit MegaDrive, for instance, has only 64K. And Kone will provide an optional upgrade to 1,024K, which is designed so you can install it yourself by inserting a new card into the disk drive unit. No more, no less.

A 1,024 model was considered, but Kone's Wyn Holloway points that a model that pushed the price of the basic state system to 1,295, is too high to a market.

The small superminiaturized disk access solution may be a compromise, but it has its advantages.

Memory chips are still expensive, meaning that size, this system keeps the hardware price down.

ROM cartridges, as well as multi-cards, provide the feature you of having that extra low-level program option added to the program. However, they themselves are expensive, so they have to be manufactured locally — almost the 250,000 top of Nintendo games.

The 3.5-inch disk, by contrast, is so common that it's almost cheap, software houses buying whole lots of it to slip on disk. Kone will need some multi-cards, but more than that it'll need more and more advanced, so they have to be manufactured locally, too. And even those will be a challenge for production the prices.

So, though the disk drive ASIC, obviously with the Multi-System's price and the arrangement of code on the disk may cause programmers some headaches at first, to meet a non-negotiable game is to be the best and cheapest solution.



is sitting pretty this picture from a Multi-System demo shows the 128 Kbyte, which Kone describes as "the key component — it allows you every movement of a player". Responding to "movement" of the joystick, allowing vision or whatever, the chair can move up to 18" in any direction (including up and down) or faster, the original design was for a 30" maximum tilt, but the engineers found themselves slapping out stress.

The console itself and a TV set in 14 inches replace the chair and plug into sockets in the chair, so there's only a single power lead to the wall.

Add a console for the chair, push on speakers behind the head, an under-console unit — and the first position they'll want that chair to something on their floor. The chair may also be sold with the console itself for some 895.

PROFILE



Wyn Holloway

"I'm in good at thinking in shapes — very much a shape person rather than a word person." Considering what the longtime acquaintance says of Wyn Holloway, it might seem that he was made for the Multi-System, which has more shape than a dairy bridge. But the 38-year-old Kone founder lost the mark in the most recent with a shape of a quite different kind — the Speedy joystick.

Holloway, a carpenter by trade, was working in a computer shop in Cardiff's central Clifton Street when he noticed the number of glass faces arriving with broken joysticks — brought in from the local sports shops.

His craftsmanship moved faster to grind away at the problem, and he soon realised that most users hold the joystick in their hands. They have no use for the rubber caps held over by other joystick manufacturers. The result was the Speedy joystick, built to be hand-held, with more than three million sales now notched up.

Today, the shape person is necessarily a words person too, spending more time on management than getting to grips with the spreadsheet. Holloway direct an F-100 jet, writes a modest pinpoints and directs his office from above cups and saucers, a far cry from the chaos of workers assembling joysticks in the 40,000-square-foot factory which his office overlooks.

But he remains closely involved with his products, handling much of the basic design himself. His secretary files all the meeting paper from his spacious desk, on which the first doodles of a new joystick or console may be made.

And Holloway was determined that when the time came to drive down from Kone's expanding new factory near Ebbw Vale in his native south Wales, through the time-frozen hills that just a few years ago were grey slag heaps, and into London for the Multi-System's launch at the end of January, he would finally enjoy playing it. "After two years and all this speculation, I want to be first at the chair. To me personally, it's everything."

"It's designed for games — we didn't try to design a computer."

KONEXT?

After the Multi-System, Kone plan a few kind of electronic experience — the 16-bit Home Centre System. Showing "for" or "for" things in one and for what they'll pay for one of them, according to the firm's Wyn Holloway, this will be a step in the direction of computer-controlled homes (TAMES).

And electronic, for the Multi-System, it's going to look different from the average last home control system. It may not be released until the state funds, however.

HANDS OFF!

Are prices sunk?

In spite of a cheap 3.5-inch disk, Kone last months open to the price problem — because their disks are not size of the shelf.

But with a few modifications, they've managed to make the disks both cheap of using cheap software and expensive. Each 3.5-inch disk differs from the normal kind in three ways, each of which they're not worried — in fact, only three people in Kone that know what's been done.

The changes are chemical as well as electronic and mechanical, so it will be impossible for your computer to copy Kone disks with out expensive equipment.

And the disk drive will also slightly different from the main, to read these disks.

Says Kone's Wyn Holloway: "We're not saying it's going to be 100% copied, but what it will stimulate a 100% copying, which is 99% of the problem."

The disk drive will also play software houses from producing Multi-System games without Kone permission — and on Nintendo as all the legal weapons of their the year's present unauthorised Nintendo games.

It's particularly important to Kone that they're involved in all software releases, because most of their profit will come from a lot of the software houses' income.

OUT OF THE BLUE

How – and why – they did it

In a Las Vegas hotel room early this year, Ray Holloway finally got away from the crowds of console-makers. After 26 months of development, his Konix Multi-System was at last in the launch pool. The thing was it had console-like software features, was rugged up, and happened around now for opening the surface-looking dust sheet over their latest games.

But as the brightest and best of America's programmers filed his name at the Consumer Electronics Show and came over what one described as "perfunctory" (standing video-game performance) showings, Holloway perhaps realised that the day had perhaps come not from these features of software code, from multinational software producers or from the technological of the computer press, but from users.

Readers, in fact, for in the autumn of 1988, Holloway had been sitting, "bored out of my mind," reading through the various sections of the computer magazines which were his only office.

He remembered, "I sat out of it jumped out of the page." All the little windows were flitting, incessantly or not, at their users for a better machine, a machine for games.

The Multi-System was born then, on one of the meeting pool where Holloway watched his deal, before they'd stated and filed by a verbal sentence.

Later, Holloway's developers were asked what their ideal machine would be like and "we're where a lot of their ideas and a lot of their criticism."

There were certainly benefits to the machines along the way, and some different processors were contemplated. Unlike the real thing was chosen.

But it hasn't changed much since design began in earnest some 18 months ago. "The original idea and the original design are the best," Holloway says.

SALES PITCH

The image matters

When Konix start a £2 million first campaign for the console this September, they'll certainly get something right to achieve the 100,000 sales that they expect in the first year.

A number of names were considered before Multi-System, which Konix means sums up the machine's multifunctional potential.

The underside Japanese was rejected, says Holloway, because what it is (Japanese) sounded like a name that, however, they really do, gets an image in my mind.

Academy System was another possibility, but was also dropped, not because of the group's image, but because the name that sounds like a name in some monetary sense.

And the selling line "It's Real Experience" was dropped because someone noticed that on packaging boxes the "Real Experience" (instead, the phrase is "Experience The Reality").

READY FOR TAKEOFF?

Real-life pilots could be taking a Multi-System home soon – and not to play games on. The Konix are hoping to set up a deal with producers of professional flight-training simulators, and give amateur pilots the chance to learn the basics of a Multi-System with clear and realistic controls.

I thought I saw many modifications from the Multi-System into a joystick control, and the setup would be for cheaper than a specially-built simulator.

Amateur flying clubs with planes like the Cessna and Piper would be in a position to sell.

THE SOFTWARE

All this and flight sims too

"It's designed for games – we didn't try to design a computer," says boss Wyl Holloway. But the Multi-System's graphics capability into ability to change control methods via peripherals and, of course, into audio-quality sound synthesizers.

So it should be no surprise if flight and vehicle simulations play a large part in the Multi-System's software, which will be released on 5.25-inch discs. But even among the 15 titles which Holloway promises will be available as soon as the machine is, there'll also be original arcade titles and conversions of the most successful home games – Top Gun only, of course.

It's not just titles, however, that many

games will depend on the peripherals for full enjoyment. Especially, Konix expect to make more profit out of the peripherals and software than from the basic system itself, so it seems likely that at least some games will require the full set-up of their 3-D view and what have you.

The price is low

As for price, at £194.95 each the Multi-System games will clearly be cheaper than most 16-bit ones. What's more, Konix themselves will provide at least two games per year at less than half price.

A total of 40 games is promised by Christmas, and 100 altogether by next spring. About 20 software houses have been signed up, and though the only ones Holloway will admit to are Ocean and US Gold, there is also believed to be input from American firms such as Lucasfilm, Microline and Microscape, and from Random Juts in West Germany.

As Holloway says, "programmers, as good as they've seen the machine, have commented they can now do a game they've only dreamed of." And software developers who've seen the Multi-System will be.



■ Left: perspective through pictures of the Multi-System's peripherals aren't available yet, and shows around them in the machine's screen. Right: looking at wireframe of a car, showing speed, and that filling in as shown here.

The steering wheel (left) has a built-in joystick to give "tactile feedback" as it gives rapidly resistance on sharp or difficult turns.

The handlebars (right) can be used either for flight control or motorcycle riding – after you've switched the mode, the Multi-System's pedals change their function to match the vehicle.

Both are included in the basic £194.95 system.

CONSOLE CHOICE

The odds-on favourites

In a world where the marketplace rules, there are too many consoles around – and some are bound to be knocked out in the fierce fight for sales.

Against against the Multi-System already on the 16-bit list: NEC's £299.95, Nintendo and Sega, with the PS, Apple also set for a big sales push this year. So far, the Sega and the Multi-System and Atari have been the most successful – and in late 1989, Sega's 16-bit MegaDrive will also appear.

The Sega 16-bit is a brilliant machine," concludes Konix's Wyl Holloway. "But it's a bit of a mess. There are things to be learned, though. This gets into all their products, they think they can do anything they do and it's better."

Why the others of us compared designs despite their mistakes, says Holloway, is that the original intent, coming from something like my, not even have heard of yet. A great design house is going to come out with something for success. It's the Multi-System.

Atmega – but as the experience of countless computers from the IBM to the 68 to the Amiga has shown, what counts is marketing as much as machinery.

To make our choice, we'll look at the Multi-System and the PS, Apple as the strongest contenders for profitability – and the Multi-System will have some head start in advertising. The more it sells, the more it makes. As Holloway observes, "The Sega is a far better machine than the Nintendo, but it often receives the Nintendo's success."



■ Joining forces – with all that has gone on previously, the Multi-System will be a considerable for vehicle simulation. This demo was written to show off the speed of its graphics. Assembling, including parallel scrolling in the background and rapidly-changing graphics, detail.

The Ledz are in town! Blimey!

ZAP!
C64
AMIGA

CRASH
ZX SPECTRUM

MAFF!
Zac McKracken!
Led Storm!
Ken the Fish!
Chuck Vomit!
Benny Hill! (not really)
A totally new
look issue!!

P.C. engine!
Arcades!
Previews!
Monitor!
Phil King!
Ducks! (HARRIS)

Wiv more clout
than A bacon butty!
And thats a lot!!!
out now!
so get 'em both!

HAVE A BLASTING GOOD TIME WITH IMAGEWORKS AND BLASTEROIDS

● **NAME** those
games . . .

● **WIN** a Blasteroids
coin-op!

W

hat's rough, tough and coming straight from the coin-ops to your computer? The answer: Blasteroids, the Atari coin-op conversion from Imageworks. Tough, the development team producing space shoot-

-'em-up Blasteroids, have taken graphics directly from the arcade machine's program cards to the ST and Amiga, reproducing the ships, asteroids and spaceapes of the original.

And so you can just see how well the game matches up to its original, Imageworks are offering a **Blasteroids coin-op machine** to the winner of this comp (which is run jointly with ZDAP, our sister C&A/Amiga magazine).

There'll be 10 runners-up from TGM, too - and the first five win Imageworks game bags, so if you missed our TGM003 Imageworks Month/and/or comp, here's your chance.

The next five win Imageworks T-shirts and watches, as worn in the TGM office, and the next five get Imageworks T-shirts.

Just answer the questions on a postcard or the back of a sealed envelope, add your name and address, and bang the whole lot off to: **A REAL BLAST WITH IMAGEWORKS COMP**, TGM, PO Box 10, Ludlow, Shropshire SY8 1DB; to arrive by March 22.

Usual rules as printed on the contents page apply. The first prize will go to one winner chosen from all entries to the TGM and ZDAP competitions.



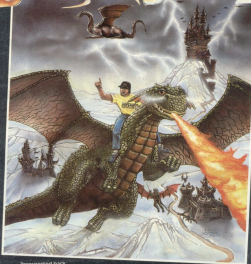
a Blasteroid from the coin-op: Blasteroids from Imageworks. Expect Amiga, PC, ST, CPC, C64, Spectrum and MSX releases in March.

NAME THOSE GAMES

The questions

- 1 Which Imageworks puzzle game features levels from programmers such as Andrew Braybrook, Jeff 'Liamsaol' Winter and Joe Alamos?
- 2 Which Imageworks game was set in the mythical dictatorship of El Dabbio?
- 3 Which Imageworks game, programmed by Denton Designs, turned fox-hunting on its head?
- 4 Which large software producer owns Imageworks?
- 5 On which classic 1979 Atari coin-op is Blasteroids based?

DRAGONSCAPE



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TALKIN' ABOUT A REVOLUTION

■ PC Engineering

NEC's Microcards use PC Engine case (credit-card-sized ROM cartridges).

These aren't really smart cards as such, as there's no way for the user to exchange the data on the card, and there's no onboard processing power - just bits and bits of memory. But they're a good example of just how much data can be crammed into a smart card.

■ Play your cards right

Mal Croucher meets a collector with a ring in his ear.

Cash is dead - long live the **smart card**! Micro genius can now put a computer in your wallet, and the revolution which began in France is about to hit Britain.

Mal Croucher gives a personal view of the pocket-sized future, while **Richard Henderson** describes the technology.

In the beginning, human beings had no need for anything as dull as money. Civilised people used the barter system, and uncivilised folk used force, hoarding much change, but we've had to wait a few thousand years for history to come full circle - for technology to make cash, and all the documents that crowd your wallet, redundant.

The bank note arrived in the mid-1700s, and the personal cheque appeared in the last century, with enough cards doing nicely after World War II.

Now cash is dead. It may be running around like a small, headless chicken or weighing down your pockets like

the tump of amber and bags of salt that prehistoric tribes used for money, but it's dead all right - because money moves electronically these days, instantly, anywhere in the world.

It didn't start till 1978 that cash was dead. Its first death blow by a little Frenchman, Roland Moreno, looks like a cross between Jan Garbriel and Woody Allen, but that isn't his only claim to fame. Just over ten years ago he came up with the brilliant idea of making a microchip with optically clear, and the little banknotes that resulted are already changing our lives. These are the smart cards, sometimes called intelligent cards.

If you've been to France recently, you will have been amazed to see how

much Roland Moreno's invention has changed the whole concept of "money". Yet ten years back only two outfits showed any interest in his ideas, a couple of French companies named Bull and Bullmanberger. When they realised the implications of the invention they bought it around, and in 1980 France-Telecom placed its first order for smart cards.

Within a few months, the world's first fully robotic factory was set up, operating 24 hours a day, 360 days a year, and by 1986 over 40 million French phonecards had been sold.

But that's nothing compared to what is happening now. Inevitable currency is increasingly across France in the shape of smart cards for petrol stations, hotels, cinemas, libraries, supermarkets, and even parking meters - and the master plan is for each citizen to have one card that will cover it all.

Norway has already opted for the system, and Spain, Holland, West Germany, Australia and Japan are testing it out.

On these phonecards we don't simply act as a pile of loose change, but could also keep a record of every number dialed and the time, date and duration of your call, as well as check your phone bill (and act as a referee in the divorce court after it's proved that you phoned your lover from the motel void).

And this is where I do my predictions: the technology is so good, because smart cards are going to take over much sooner than later, and we must use them before they use us.

Credit risks

My photographic colleague Stuart "Clicker" Nelson will be able to give you a complete list of all the relevant foreign books that feature human beings reduced to nothing more than their "credit ratings, in the 'you are what you're worth' mould.

My favourite is the one where everybody is thrust with an electronic collar around the neck, which phones every black at the time you are in credit, turns red when you get into debt, and thumps you if the credit computer reckons you can never repay your Citi-

100 years ago, a bright spark named Sir Rowland Hill came up with the idea of the postage stamp. A tiny handful of people began collecting these mass-produced bits of paper, while the rest of the world simply used them and then chucked them away.

Today stamps are a better investment than many, and the world is worth thousands of times their real weight in gold. So imagine if you had been around back in the 1840s, when postage stamps were just beginning to spread all over the world, and you knew then what you know now.

Imagine? Rowland Hill said exactly the same thing is happening with computerised phonecards, and some others are already valuable!

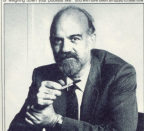
There is one man in Britain who is the acknowledged expert in collecting phone cards - Dr Steve Hancock, a civil servant, working for the Department of Transport's motor vehicle Research Department when he's not collecting five or six squares of coloured plastic.

He says people would regard collectors of phonecards as somewhat eccentric. How do you get into this?

Steve: I am one of a classed breed, a born collector, and I started at all my time at school. The first 'phone' is the collector's phonecard collection?

Steve: There are already very active collectors' clubs setting up, and it's quite big business with professional dealers operating them.

How many top? Steve: 1250 and 1300 each. But that's a useful few phonecards?



4. Putting his money where your credit rate: phonecard collector Steve Hancock

ation.

As I write this piece, the average household in the UK is in touch to the tune of £1,588 containing mortgage repayments, and 80% of all salaried employees are tagged in to more than 20 private databases that reveal personal information concerning their credit status, buying habits, habits and much more.

These science-fiction visions suddenly look very old-fashioned indeed. Computers already know what nine out of ten of the working population in this country are "wired".

The new Europassports will change into identity smart cards within the end of the next decade. In fact, I predict that they will not only hold a

record of your travelling habits, but will also act as your driving licence, your medical file and your police record. And they'll probably carry one hell of a lot more personal data that is currently retained by the Social Security, companies, educational authorities, city police, medical etc. you name it.

Naturally, the Powers That Be will deny that most of this information is held on your identity smart card, and they will be quite right. But as soon as your card is scanned by a portable reader, which is linked to the Central Computer mainframe, all of your intimate details could be called up at the touch of a button, anywhere in the world.

Brave new world?

I don't want to play down the incredible advantages that the smart card is about to hand us. We will be able to check the state of our bank balance

from a single card.

And are you smoking?

There is a lot to be said, it depends on what you want. Personally, my 1000 of free standard service cards overprinted in China in 1988. They are probably the smart cards of the world, worth around the £200 mark. But I received British cards worth £1,000 in Japan, and the Japanese business cards tell me that they will make 20% of the cards they sell are disappearing into private collections, and are well used!

And how the smart card phonecard?

There isn't, the British Open Golf Championship commemorative 100 will card about 0.1% in total circulation. And how good are they?

from a restaurant, instead of wandering around a wilderness shopping precinct looking for a cash-dispenser that works.

When we get knocked down by a double-decker bus, the paramedics will be able to whip out our smart cards before whipping out our kidneys and discover our blood group, what drugs we're on, if we are wearing HIV antibodies, the AIDS test, and if we can afford to pay for the nearest ambulance fare.

We will be able to travel through dangerous places like Manhattan, Beirut, and London, carrying a letter in smart card credit - and not give a toss when we get robbed, because the thief won't know our personal identification number. First just pass along to the nearest smart-card station, say in our ID number, give a thumb print, voiceprint and retina print, and bingo! Our new card pops out of the slot.



A smart but perfectly-formed French smart-card inside Roland Blum's

Of course, there's a problem for the homeless, the unemployed, the mentally handicapped, the criminal or the nut, and anyone who deliberately chooses to opt out of the smart-card future — computerized economic control is going to force them into a status of violence.

In other words, this solution already exists in everything but name. For all the rest, the smart card's cash-free society will seem like a natural progression from today's credit culture: the only people who haven't benefited from tag manufacturers.

Society will have to cart around a seaful of junk consisting of coins, bank notes, credit cards, driving licenses, passports, insurance cards, visiting cards, address books, entry tickets, cheque books, travel kits, phone numbers, season tickets, blood donor cards, traveler's cheques, luncheon vouchers, library cards, doctor's prescriptions, parking

tickets and last wills.

So if it's already happened in France, when will the revolution reach the UK? The BBC has defined electronic money as follows: "The combination of computer, magnetic, electronic and information technology to enable funds to be transferred without the exchange of coin or documents, involving a three-way relationship between banks, merchants and consumers."

Cash and credit lenders will be dismantled in Europe from January 1 1992. As a well-known singer once wailed: "People get ready!"

Neil Croucher

How would you like to open locked doors using a credit card? No, this isn't *The Time Machine* or *Back to the Future* — it's just a smart card — probably the most useful thing since Henry invented the wheel.

The smart card is the same size as a normal credit or cashpoint card and instead could easily be mistaken for one of its number cousins. Look within a smart card, however, there, because my 8-way tipster, and embedded in the plastic you'll find a processor chip and up to 1MB of RAM (microchips store only 256 bits of information).

This is what gives a smart card its "braininess" and sets it apart from its business relatives. It's like a plastic card with a brain.

Most smart cards have exposed electrical connectors that allow them to be interfaced to another device, such as an EFTPOS electronic funds transfer at point of sale terminal or a photocopy payphone, but their future applications range far further than that.

Because the smart card has onboard processing power, it could easily incorporate a tiny keyboard and LCD screen (well, it'll be easy if you were an electronics whiz with an immense budget) and be made into a personal database, electronic notepad or other gadget.

As data storage devices, smart cards could be a worthy alternative to disks. There's a lot smaller, and the data stored on them is less likely to be damaged, because the embedded memory chips are better protected than the exposed magnetic surface of disks.

For Oliver Sinclair's 8-bit Pandora machine, you'd have used smart cards as storage media, but by the time the Pandorized machine is 16M portable, for Oliver's version about a dozen electrical connections on the cards had killed the idea.

Several pilot schemes exist around the world, testing smart-card technology in different applications. Currently, the most popular use for smart cards is in the world of finance, and many banks are conducting small-scale tests right now.

So, in financial too-distant future, the card you get from your bank will have all your financial records stored on it. When you buy something using the card, your balance is simply recalculated and the card updated. When a payment is made to your account, the

card can be "loaded" with the extra cash. Rubber cheques may become a thing of the past!

All bank account holders in France will be issued with smart cards by 1990, and in Luxembourg bank is about to replace its 40,000 magnetic strip cards with smart Visa cards.

Peanuts and TV

Other schemes in operation, or being tested, range from health care — patients' medical records and prescription details can be stored on smart cards — to agricultural sales of products in the southern states of the USA are collected and monitored with smart cards.

It seems likely that Rupert Murdoch's Sky Television will use smart cards to extract payment from viewers of its two subscription-based satellite channels, Sky Movies and The Disney Channel.

The signals will be scrambled, so a decoder will be needed to unscramble them. The decoder, which will be as big as a decoder box, which is inserted into the decoder unit to give a perfect picture. Don't think you'll get away with buying picture decoder card, thought: costs £12 a month to view Sky's pay channels, and they'll be changing the method of encoding the signal each month, so you'll have to keep buying out the decoder for new cards 6 times a year (total cost £144).

In Japan, you can buy smart-card sound players. Essentially miniature digital recorders, they can be used to record spoken messages which can then be played back at will.

Smart cards could also be used to replace keys — already, many hotels and large organisations use encoded magnetic cards to open locks. Because they're tough to forge, the security services use them too, maybe the card of 1991 wouldn't let you into the hotel room if you hadn't paid the minibar bill.

Getting cheaper

Your average smart card costs around £3 to make, compared with 10p for a normal magnetic-strip card. As always, though, costs fall as demand rises. Smart cards become more and more common, and the increase in price doesn't really seem too drastic when you consider the capabilities of a smart card compared to a magnetic one.

Besides, smart cards may offer some savings in other ways. British Telecom's photocards are designed to be used by their credit expense, then shredded away. A smart photocard, however, could simply be "recharged" with extra credit when it runs out.

And the card's onboard memory means you could load your most commonly-used numbers on it, then just select the appropriate number from a menu when you want to dial.

There's no doubt that smart cards will have a great effect on our lifestyles when they are available on a large scale. I only hope that the powers that be can get all the different smart-card systems to interlink properly — I don't relish the thought of the entire contents of my bank account being forwarded to British Telecom every time I try to use a cashpoint machine.

Richard Henderson



CONTACTS

■ Collector's information exchange: Andrew Hall, Telegraph & Telephone Mail Centre, PO Box 62, Kent ME1 1TS.

■ The Collector's book of reference: Cards is available on flat order from Dr Steve Meadows, PO Box 77, Stone, Staff. GU27 0NH. Price £4.95 plus p.p. or £4.95 plus p.p. of Europe, including postage.

Mercedes is also producing collector's newsletter updates every quarter.

Accolade

WHAT THEY SAID ABOUT... HardBall!

Accolade

"An absolutely incredible sports simulation"
"Sets new standards in gameplay, depth
and animation" *Esq* 68

"The playability, design, variety and exceptional
realism make this a sports simulation to
remember" *Amiga ST User*

WHAT THEY WILL BE SAYING ABOUT

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the hitting, the goal line stands. You'll
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that are as riveting as a live action
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STRATEGY!



TACTICS!



ACTION!



111, Dept. 1111, 1111,
1111, 1111, 1111, 1111,
1111, 1111, 1111, 1111,
1111, 1111, 1111, 1111

ROB STEEL'S GETTING ADVENTUROUS

STEEL SHAVINGS

It's not that Zak McKracken is the best adventure I've received this month (though it comes close). It's just that if you'd ask someone as persnickish as Tim Baker (baker@compuserve.com) European Project Manager you'd also feel obliged to review his products. The fact that she is a shaver is neither here nor there....

ZAK MCKRACKEN AND THE ALIEN MINDBENDERS

US GOLD/LUCASFILM GAMES

COMMODORE 64/128 Diskette: \$14.99

PC: \$24.99

AMIGA: \$4.99

ET is phoning home with a vengeance! Space aliens have built a machine that, via the telephone system, is slowly reducing everyone's IQ to single digits (not much of a reduction for some of us). The only person who has a chance of stopping them — with more than a little help from you of course — is Zak McKracken, daring reporter for the National Inquirer.

Fortunately for Zak (and Mankind as it happens), there are hands on whom he may call for help: Annie without her gun, head of the Society For Ancient Weapons and her two buddies, Melissa and Leslie, two Irish cunts who claim to have travelled to Mars (once for

the alien attack) in a converted van. These four utility heroes, guided by you, attempt to piece together fragments of an ancient puzzle, annihilate the aliens and destroy their machine.

The game is presented predominantly as an animation

window, below which sits the sentence line for input, action words available — the vocabulary changes to suit the situation — and your inventory. At the very top of the screen is the message line.

Sentences are limited by pointing the cursor at actions. Characters or objects (either text or graphic), and clicking. Commands such as see, go, open, have and use are available.

More complex sentences are constructed by, for example, clicking on see, the reason and the piece of wallpaper. The program will advise automatically when the complete sentence should read "Use crayon with wallpaper". A click of confirmation and, if it's possible, the instruction is carried out.

Work, rest and play

There's plenty to do in each location. Zak's bedroom conceals a number of necessary objects and some intriguing loose floorboards. As the topic quarter are able to carry a ridiculous number of items with them, regardless of bulk, and due to the alien element in puzzle solutions, pick up everything that isn't screwed down.

If the backdoor leads out, Zak's adventure takes him to many places: Mona Henge, Mona (unfortunately closed for repairs), Kappa and numerous building airport terminals. And his quest isn't confined to earth, unfortunately.



The all-important bus, complete with important driver, ready to take to take you to the airport — Amiga version



paid to the aliens' plans, he travels to Mars (where the game does atmospheric) to hopefully open new doors in his adventuring career.

McKracken is a reasonably whiff playing through not so much on the Amiga version: the flash of light created in your mind upon reaching an ingenuitous solution to a particular problem can be defined by the action pace at which Zak and his chums carry out your orders. However, the pictures, animation and messages along the way are sufficiently amusing to render the time not too tedious.

**ATMOSPHERE 81%
INTERACTION 79%
OVERALL 81%**

VOTE FOR THE BEST IN 1988

Computer Leisure Awards

For the first time ever, you will be able to join with the readers of many other British magazines to decide who and what was best in 1988. Awards will be made to software producers resulting from your voting through, this, your own magazine, for what you considered to be the best games you have played on your computer during the past year.

Many other magazines are carrying this voting form. It means the results will truly be democratic, and therefore really mean a lot to those who receive them.

The votes will be collated by an independent company, to whom you should post your voting form, and the awards will be presented at the Computer Leisure Industry's 'get together' — Computer Arena — in March 1989.

So, simply fill-in the voting form below, cut it out (or photocopy it) and send it to:

GAMES OF THE YEAR
MICHAEL BAXTER
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COMPUTER LEISURE AWARDS 1988 VOTING FORM

Closing date: 28th March

1) Please tick the computer format you are voting for:

- AMIGA ☐
AMSTRAD CPC ☐
ELECTRON ☐
COMMODORE 64/128 ☐
PC COMPATIBLES ☐
ATARI ST ☐
SPECTRUM ☐

2) Please state what you consider to be the BEST GAME OVERALL of 1988:

3) Which Software House do you choose as being the most consistent in producing high quality computer games during 1988:

4) Please name your choice of best game (from the format ticked above) of 1988:

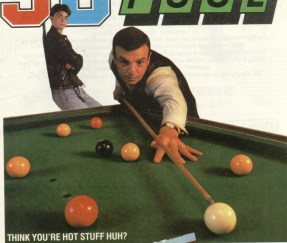
1. Best ARCADE game
2. Best ADVENTURE game
3. Best STRATEGY/WAR game
4. Best MUSIC with game
5. Best USE OF GRAPHICS

Name

Address

Postcode

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Well here's your chance to prove it.

European champion "Mafioso Joe" Barbaro is waiting to rock 'em up and blow you out.

Unlike any other pool simulation, 3-D POOL incorporates a unique "move-around the table" feature — allowing shots to be played from any position, just like in a real game.

3-D POOL will take all your skill to master and if you do get that lucky break, how about entering the nationwide "Mafioso Joe" high score competition with the chance to play a real frame with the champ. Full details in every box.

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The Games machine

REVIEW

60 ■ PHANTOM FIGHTER

The flashy little Karts never did anyone any harm, but the Fantozzark fleet invaded them planet anyway. Now the Karts are retelling and reducing the colonies to dust with a bloated collection of spacecraft. In this hot scrolling shoot-'em-up from Matsushita, you've been given the task of exterminating the Kart fleet using your multiweapon ship, with only a handful of coins to help you. Probably the best PC shoot-'em-up in the world. And it's not just on the Amiga, either.



48 ■ LED STORM

This Capcom coin-up may not be a name on everybody's lips (probably 'cause they're still lost in la-la-land from saying this sentence), but with this great multi-format release, it's hard to have shown us that it certainly should be. On the violent roads of the future, you drive a rumbly roadster which leaps and bounds over treacherous gaps and evil motorists, and uses game car-crushing powers (by clicking up power icons). A road- (and future!) racer's dream, *LED Storm* is one of the most playable racing games yet.

40 ■ TV SPORTS: FOOTBALL

'Should-be-John-Castles' can cope suitably their soap idols with huge 'n' bulky shoulder-pads — Chrisman have translated out from medieval conceptions and heroic mythos in the sporting world of American Football. *TV Sports: Football* mixes detailed use of tactics with joystick dexterity and high quality graphic definition and animation. Reviewed here on the Amiga but soon to guest on other formats, this is a polished presentation to create a simulation so effective you'll think you're watching Channel 4.



The Games machine

TOP SCORE



36 ■ SPITTING IMAGE — C64

If you thought the TV programme was unfunny, wait till you see the game! *Spitting Image* features poor gameplay across all formats, but the C64 version dies on its feet thanks to bad graphics, stodge animation and a negative playability factor. It even mentions Barry Manilow on the packaging... Those times!

SPECTRUM

Advanced Dungeons and Dragons	56
Cross Games	45
LED Storm	48
Spitting Image	36

COMMODORE

Cross Games	45
LED Storm	48
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Superman	35

AMSTRAD CPC

Advanced Dungeons and Dragons	56
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MSX

Advanced Dungeons and Dragons	56
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ATARI ST

Advanced Dungeons and Dragons	56
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AMIGA

Advanced Dungeons and Dragons	56
Cross Games	45
Custom	41
Superman's Last Stand	45
Superman's Computer	44

PC

Advanced Dungeons and Dragons	56
Cross Games	45
Phantom Fighter	40

NINTENDO

Custom	41
Top Gun	40

PURPLE LIKE

PURPLE SATURN DAY

Intergalactic

Every 29 years 167 days — a single year for the planet Saturn — the galactic games are held. They are the brainchild of Hans Morlok — uncle to Bob Morlok (AKA Captain Blood) — inventor, alternative medicine expert (and pizza playmate). Eight forms of at least semi-intelligent life are gathered and pitted up to compete in four events.

The options screen shows icons of the four events, which may be selected for practice. Otherwise, the Purple Saturn Day logo is displayed showing jousting for the quarter-finals. Besides an opponent icon can also be selected, this opens a profile of the alien.

(Mastering Mental Maelstrom, where each player attempts to guide electrical charges from their side of the brain to the centre. To do this, switches must be flipped and charges scooped over bridge components

with an electric ball — a living cursor fired at the circuit from a high voltage point. Condensers are used to arrange the electrical so that chips can be activated to complete a path to the centre, but progress is hindered by opponents' evil designs.

(Energy is the form of fast-moving sparks is collected to fuel the gravity-catapult for Time Jump (Mastering Time). When enough have been collected, the speed of light is exceeded and another dimension entered. The winner is the one who travels furthest through space and

time.

This package of four sub-games retains the unusual atmosphere of Captain Blood, and with puppets and music liberally used, has similar high Diger-infused graphics particularly in Brain Brawler.

Events are quite simple (particularly Time Jump) but, though well programmed, have general real limitations. The alien team as games are played, and their new characteristics saved to disk, so challenge is always present. But the great anomaly is the lack of a two-player option. This completed, Purple Saturn Day would be a fun, highly competitive multi-event game, rather than a mildly entertaining one.



The options screen surrounds an alien's profile. Left: Might be best to let him win, his little looks pretty mean — *Angus Brown*



Energy (later section) it's no good being of the body shown opponent's ship, it's hitting the energy ball that gains points — *Angus Brown*

their top scores, success percentages and characteristic ratings: agility, mental fluid, aggression, temporal fix (time-travelling ability), size and strength.

Events are played in any order and in direct competition with your opponent.

(King Persulf: Mastering Space) is set amongst Saturn's asteroid belt, where competitors race to complete a circuit. Red and yellow static-spaceships act as markers when the leader passes right and left respectively. Points are awarded for leading and correctly placing markers — misdirected manoeuvres give the opponent points.

Taking place in a rectangular arena, displayed in perspective, Cosmic Jester (Mastering Jousting) has competitors firing at an energy ball. When hit, a fragment and the pieces of energy are collected for points before another ball is generated.

Brain drain

A gaze view of a symmetrical electronic circuit provides the location for Brain Brawler



There's no fear of a short with circuits this long; the action's electric and it's all power to the brain

US

Picture right: searching in and out of orbits approach markers in *Wing Pursuit* is quite a headache as the aim without having to avoid the asteroids as well. If you're in front you get the points, but at the back it's... well, no point at all. Better pull back on the joystick and collect enough fuel for a time jump. Your objective is to travel further in time and spend that just approach. The picture — *Amiga* — is clearly from the earliest's testing phase, so don't expect the game itself to look quite this good. This is the simplest of the four events to win, but the reward for winning is an interesting graphical representation of a swirling flower — well what do you expect from another *Amiga*?



OTHER FORMATS

Commodore 64/128, Spectrum, Amstrad CPC (Cassette), ZX81, ZX80 (2.4.00) and PC compatibles (2.6.00) were.

AMIGA 128/65

Other than being a little slower, this is identical to the Atari ST version in all respects.

OVERALL 72%

ATARI ST 128/65

The unusual colours and artistic designs of the graphics are let down slightly by simple definitions in places, such as circuits in Brain Booter and the enemy ship in Tennis Master, but on the whole they're well drawn. Objects move at an impressive speed and in the parallel asteroid field it is particularly effective. The sampled life music and jingles are unremarkable but the FX are very atmospheric and often bizarrely futuristic. Visually impressive yet boring to play, the game shows off the ST's graphics capabilities nicely — but what can you do with pictures?

OVERALL 73%

"Events are quite simple, but none generate real enthusiasm"

VERSION UPDATE

TIMES OF LORE

MicroProse

Atari ST: £24.95

CHANCE reigns in Albarrath until the arrival of the Sisters. Their song ruled well and brought harmony to the land with the aid of

three magical artifacts.

An amusing battle opened invading barbarians ended in deadlock. To keep the peace the invaders were given the town of Gannetot.

King Hildryn grew weary of survival, and left for his homeland with the assistance of Power Hebeleson. Hildryn found both advantage of his absence and launched an attack on the barbarians. Hildryn does not return, and chess abounds once more.

After selecting a character from a choice of three, you begin the quest to restore order.

Viewed from above, your graphics are stored in four directions around the scrolling



your character is selected — a scowling blonde with a statue start — stone me!

Albarrath. The first button is used to attack other characters. Objects left behind by slain spies are picked up via one of the icons at the bottom of the screen. Other icons enable you to talk to characters and examine, use, offer and drop objects.

The title sequence is very well done and pleasing to the eye, but is tediously slow. This is in contrast with the game, which scrolls at a frustratingly slow speed while being equally as jerky as the Commodore 64/128 original. Introductory screens and game graphics are adequate but make little use of the ST. A palatable rendition of the soundtrack is given.

Cluttering speed means this conversion of an absorbing game, converting it into an exercise of patience.

ATARI ST: OVERALL 50%

COMMODORE 64/128:

TECHNICAL 77%

Taking a gentle stroll through the fantasy land of Albarrath really reveals weak ST graphics.

VERSION UPDATE

A chequered future

BATTLE CHESS
Interplay/Electronic Arts

PC: £24.95

CHESS programs may not be the most gripping software, but Battle Chess helps itself by combining the intricacies of the ancient game of strategy with subtle animation.

The PC version is as humorous as its Amiga counterpart, featuring chess pieces hopping about out of each other and using humorous dry jokes to taunt the board of opponents.

Best appreciated with an VGA or VGA graphics board, animation is as good as on the Amiga, with no noticeable difference in definition. Characters fight and walk in single, flowing movements.

Ten skill levels are on offer, along with a dual computer mode

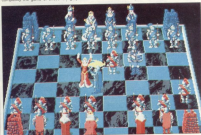
and most standard chess options (displayed by hovering characters).

Battle Chess places heavy emphasis on graphics, in terms of complexity the game of chess is

secondary to presentation. Nonetheless, the end result is a superb strategy game with humourous, well executed (but intended) graphics.

OVERALL 81%

AMIGA: TECHNICAL 82%



Outstanding visual reference on the screenshot above creating a game board

TIME IS TIGHT

CRAZY CARS II

The

Driving at 200 mph in a Ferrari F40 is a safe-fire way to get yourself in a tight state. In *Crazy Cars II* if you experience four states (not including panic) in a high-speed bid to rid America of its stolen-car racket.

Corrupt policemen are behind the scam, although straight cops still diligently patrol highways. Defensive driving is required as you are ignored the state and must avoid law-abiding coopers as they attempt to stop you breaking the speed limit — they erect road barriers. The bent coopers and their not-so-legal allies aren't so friendly when you're out of the road.

The chances of getting lost are lessened by a road map called up to help you navigate a route from 4 to 0 — the closest way is not always the safest.

You are thoughtfully supplied with infinite cars (necessary as the controls are mega-sensitive), it is a zero time on the clock that ends your game.

Left and right, high or low gear, acceleration and deceleration are the only controls you need every street, although your dashboard is adorned with fairly useful and distracting games.

Back to your routes

Radar lets you know if there are cars about, score and bonus are constantly on display, as is your speed (choose either mph or km/h). Its map-mode the cartographical display takes up most of the screen and the display to the right of your bonus alternates between time remaining and the number of the road you're on. Before you're arrested a test out of hell, the screen also provides information on up-and-coming junctions.

Having all this high-tech at your disposal is great — if only you had time to look at it. Take your eyes off the road for a second when cruising at 200 mph and it's Ferrari trousseau time.

Close control of your vehicle is mastered, the feeling of speed provided by *Crazy Cars II* is brilliant. Although the only roadside obstacles are lampposts, telephone poles and billboards, the smooth



Jeopardy, cartographical poles, state boundaries, speed-of-terra... and *Crazy Cars*, too. (Clockwise, top, left and right) — the day-of-the-automobile make the road a not-so-safe place

steering and fast updating make this an incredibly realistic driving simulation. Backgrounds scroll nicely left to right as you turn rather than being coherent, and hills and dips are so plausible that a hint of queasiness might subtly tell the excitement of having to take out the next black and white (or brown and white — depending on which state you're in).

The time limit is tight and more traffic on the roads would have been nice, but *Crazy Cars II* has it a vast improvement on its predecessor and wonderfully compelling to complete.

STAR 87 £19.95

An interesting piece of music accompanies the attractive loading screen but in-game FX are disappointing. Nonetheless, *Crazy Cars II* is smooth, fast, realistic and addictive.

OVERALL 82%

OTHER FORMATS

Breaking the speed limit is soon to be allowed on the bridge for a very reasonable fine of £19.95.

"Take your eyes off the road for a second and it's Ferrari trousseau time"

LEADERBORED

SPITTING IMAGE

Domark

Although Domark have themselves been on the receiving end of *Spitting Image*'s wrath, thanks to their '88 release, *Spit Personalities*, time has healed the wounds it seems. They return to the take-the-piss-out-of-all-and-sundry world of latex with a game they claim is more exciting than *Ninja Gaiden*—proud boasting indeed.

You get to play one of six world leaders — including Margaret Thatcher, Mikhail Gorbachev and the Pope — in an effort to beat up the other five in one-on-one confrontations and eventually rule the world.

Each leader has different attack methods, sticks and tactics and they go about duelling each other up in what Domark hope is an amusing fashion. It isn't.

Seeing a drunken Gorbachev sway on-screen to an ad on selling Maggie is a first attempt at humour. And watching FW Bush ultimatums over his adversaries was so funny I fell

asleep — almost.

Even though this is basically a combat game, the repeated words deeper than that of *SC or Exploding Fist*. Unfortunately, the imitations of four moves, plus a partner to help out, proves otherwise.

Heating wholly on its own with, and so-called humour of, the TV programme, *Spitting Image* fails to rise above the ranks of a very poor man's *Exploding Fist*. If you're trying it for the humour (why else?) you may have a fun time for the first hour — but that's all.

ATARI ST £19.95

Graphics prove the selling point, featuring detailed backdrops and characters to match — these don't help the game in any way though. A limited move, limited interest slapstick fighting game like *Spitting Image* can't hope to compete with titles like it.

OVERALL 32%

Bush, Gorbachev and the Ayatollah (below, as the ST), decide to settle their differences in the way they know best — with endless violence. Right, as the CH — dirty wars and cheap backgrounds abound in this heavily limited



Cigar-smoking, bubble-blowing Mr. or Mrs. Bush — she is shorter and is taller.

AMSTRAD CPC Cassette: £8.95, Diskette: £14.95

Looks the best of the 64k versions, though backgrounds aren't brilliant. It plays better than the C64 game, but not as well as the Spectrum. It still lacks addition, playability, amusement and usability.

OVERALL 35%



COMMODORE 64/128 Cassette: £9.95, Diskette: £12.95

Confusion reigns on the C64 and small-world leaders scampering around in front of miniature-than-average backdrops don't help. An attractive 1024 screen and front-end doesn't make up for desperately poor gameplay.

OVERALL 28%



SPECTRUM Cassette: £9.95, Diskette: £14.95

Spectrum's *Spitting Image* is no better to play, but at least the graphics and presentation are better than average.

OVERALL 36%

OTHER FORMATS

Amiga owners may indulge in rubber for £19.95 — if they so desire.

"Fails to rise above the ranks of a very poor man's Exploding Fist"

Conversion	1.75%
to 3-Year	2.14%

Cash	2,000
Debit	12,500

Cassidy	1989
Eller	1991, 1993

Her dark powers combined
in the Queen of Evil, capable
to wreak havoc amidst the inhabitants
of the Realm of the Mithrae.

The ultimate battle between the good and evil
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MINE ORE CONFLICT

THE LEGEND OF BLACKSILVER

US Gold/Egypt

Take this opportunity to win your seat in the south — or in the experience if you're less subtle.

The land of Maalbana had rich deposits of iron and copper ore which were mined greedily — until the banished mage Minon arrived. He discovered a magical rock and took control of the mining industry to get it. No other ore was mined, only the newly-found mineral, Blacksilver.

Blacksilver was the only source of magic on the world of Barroos, and with his band of followers, Minon used its power to make Maalbana prosperous and to form a powerful unquestioning army. They invaded nearby Tanaga and took command with ease. Once the land was conquered, however, Minon's minions grew bored, and combat took place between rivaling warlords and their armies. As they used more and more magic to fight each other, the Blacksilver deposits disappeared and Maalbana sank into the desert, leaving the magicians powerless.

Peace returned for 27 years, then the reclusive Baron Tanaga re-discovered Blacksilver and mined it. Learning of the Baron's plans for domination, King Derek set out with his best knights to eliminate the forces within Tanaga's fortress. It ended in disaster, the King was kidnapped and the fortress magically vanished.

Now, the wizard Gervol has advised the isolated Princess Ayala that a magical shield against Tanaga will not work; a single heroic warrior must defeat him.

Attribute to RPGs

Needless to say you are that warrior, shown in-screen as a small white figure surrounded by a plain view of your immediate area. Your character has five attributes — Strength, Endurance, Dexterity, Intelligence and Charisma, which begin at 15 and increase with experience or decrease with misfortune. As standard for RPGs, Hit Points indicate your general state of health, their maximum number is experience related.

There are 17 commands, accessed from a column at the left of the screen, allowing standard actions such as being and using items, casting spells, attacking assailants, and examining your surroundings. Some commands lead to a sub-menu of options.

The adventure takes place over various terrains (grassland, forest, desert, swampland) and on on, each type featuring its

own array of inhabitants.

The Legend of Blacksilver scores no points for originality as the game design and general plot have been seen many times before, especially on the C64. The screen display is crude and, unlike Ultima II, commands are not sophisticated enough to compensate. The Fight option only allows parry or retreat attacks, rendering hostile



COMMODORE 64/128

Diskette: \$14.99

Language and characters are crudely defined — reminiscent of the ancient Temple of Apophis trilogy — and animation is equally basic. More care has been taken in drawing the somewhat 3-D tunnels and corridors of the dungeons, but the attempts at animation are poor. An irritating title tune and sparse effects provide the backing.

OVERALL 50%

"The Legend Of Blacksilver scores no points for originality"

encounters extremely boring. Communication is basic in that you have no control over what you say, other than asking questions which require a yes/no answer.

The playing area is large and there is much to do, so although the idea is old and quite simple, there are many hours of play available for those who feel a need to indulge.

OTHER FORMATS

A PC legend room, £19.99.



Now the cat became a feline predator in The Legend Of Blacksilver

REFLECTION

TV SPORTS: FOOTBALL

Greenware, Microsoft

The roughest, toughest and one of the most popular sports in the USA arrives on the Amiga backed by a winning team. The first of aTV Sports range of software to be released — planned future events include boxing and basketball — the sports, Greenware, join the sporting fraternity with a history of professionalism and success.

TV Sports: Football puts you down on the fifty yard line for the game of your life. Instead of adopting the severely limited first-person viewpoint of a game — such as in Activision's G.I. Football — TSP is played from a conventional

view. The heart of TSP is made up of two screens, the play calling screen, where tactics are selected, and the field screen, where plays are called and tactical put into effect.

Through the play calling screen, any of four basic team formations are selected together with any of four plays — defence formations are standard for this sport, inside and outside runs along with blitzes, and pass defence moves are also possible. For the offence, there's Shotgun, Point-Blow, I Formation and Kick

moves can be called along with any of 8 player moves.

Once all is ready, you begin the match. As the quarterback shouts the calls and yells Hail Hail Hail for no logical reason, the ball flies into the air. Obviously the entire team can't be controlled all at once. Instead one player is under direct control (either a safety, cornerback, linebacker or the quarterback). Whether passing, running or blocking, your player has a critical job to perform.

While you're busy with your own team player, the computer controls the others as they try to block the opposition, get into pass positions, attempt to sack the rival quarterback and generally make life unpleasant for the other team.

Action isn't confined to



Put the TSP 60-Bars up against the 2040 Squares. And watch as their team



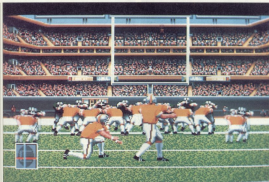
offence and defence; field goals feature cameras zooming in to treat the viewer to a behind-the-keeper, long-side post, lining up a cross hair on the football icon, the ball is kicked between the goal posts. The defence can only muster a lone player who leaps up and darts in vain to catch a rare low-flying ball.

Kicking punts

Time outs, punts and take punts, incomplete passes, turn-backs, offside calls by the referee and interceptions, incomplete with speed are all there to be experienced. Near everything to do with the sport is

The embarrassment? The degradation? Being stopped by someone with such a ridiculous name?

PERFECTION



American Football has been reentered into the game.

T&F isn't just a single-player game; a player v. player mode is included along with a team mates option where two players take on the might of a computer team.

Four options are available: an Exhibition game, practice modes for kicking and play

tactical, a clipboard/statistics screen and league game option. In the latter, 28 teams take on one another in the fight for the Cinemascope Football League trophy.

Flexibility in defining tactics and creating winning plays makes this a very entertaining game, ideal for armchair sportspeople and perfect for

American Football fans. However, notions should be before they buy because although the accompanying manual details everything about the sport, the strategic element and degree of testing ground involved may not be their cup of coffee.

The infamous disk access is very low-key in relation to previous Cinemascope games and only slows down the pace marginally (with dual-disk drives it's negligible).

In true Cinemascope fashion, attention to detail and extras

"It's perfect" — you'll no doubt soon hear the opposing player cry

abound: adverts, half-time programmes, results and statistics, buzzer cheerleaders, an appreciative crowd, roaring footballers and more create the full atmosphere of watching a live game. The overall effect is of a polished and very classy program — perfect for fans of American Football.



May your play with the multitude of tactical options

AMICA £29.99

Originally superb, in-game action features small but beautifully formed players complete with realistic animation. Football presentation is accompanied by great sampled speech. This is an unmissable simulation for those with an American Football bent.

OVERALL 90%

OTHER FORMATS

Cinemascope have decided to wait until the beginning of the next Super Bowl season (Autumn 85) before releasing TV Sports Football on the PC (£29.99), ST (£29.99) and C64 (Diskette only £14.95).

"Attention to detail and extras abound"

CRAZY GULF

TOP GUN

REVIEWED

Steam-catapulting from USS Enterprise into the wild blue yonder, your F-14 storms through middle eastern skies to take on enemy MIGs. A real-life situation? Uncomfortably close but fortunately this is only a game.

Things are hotting up in the Gulf, a nameless enemy has successfully taken control of oil fields and is attacking allied countries and the US Task Force Nimitz. Well, it's that time, everybody opens their launchers, the afterburners, the fire, world goes, steam the puffs.

In mission 1, Enterprise is sent to the region and her F-14s launched. Engaging in battle on four separate missions, Tomcats are up against the enemy's entire air sea and ground forces.

Before taking off you need to arm your craft — choose weapons to test out the type of mission you're on. Against enemy fighters, air-to-air missiles will do. Already developed is a multi-barrelled cannon — just in case you run out of missiles.

Even with a top-class fighter plane strapped to your backside you're not invulnerable. A missile up your tailpipe isn't going to do you much good, neither is taking too much damage from cannon fire. Similarly, any enemy that

lashes onto your rear has to be shaken off pronto, else you're going flying without wings.

MIG-air clash

The first mission is just a case of surviving an onslaught of fighter jets. On the three other missions, your main priority is a well-protected major enemy target. Against naval forces the target is an oil-drift carrier, over land it's the enemy fortress and the last mission is against the space base.



Give the slow main a wink before you set along the coast and burn him to a pile of phosphorus ash with your jet engines



If you aren't in too-demanding a mood, take to the skies and chase around with this low-key fighter combat sim

Should you manage to turn enemy targets into so much scrap metal, it's time to head for home. Landing on the carrier is the final challenge as your jet attempts to maintain a set speed and height on the final approach — miss and the topcopter isn't going to have to look out again.

When fuel gets low a tanker is called into the area, the refueling sequence follows a similar style to that of landing, with your F-14 trying to hook up to the flying petrol pump.

As in many Nintendo games, the emphasis is on playability rather than graphic presentation. On this level the Gulf succeeds as it provides four limited, but very playable missions with extra features — landing, refueling and a missile strategy — to spruce up the action.

NINTENDO £29.95

An atmospheric picture of your cockpit staring up skies will fire action, although in-game graphics are little more than a detailed cockpit and fast-moving enemies. Limited three-dimensional movement betrays the real F-14's manoeuvrability but remains acceptable. A pleasant surprise and orange fuel tank up the otherwise weak spot effects.

OVERALL 65%

"Top Gun provides limited, but playable missions"

VERSION UPDATE

RAMBO III Ocean

ATARI ST: £19.95

RAMBO'S off on his anti-communist escapades again, this time to rescue Colonel Trautman from the clutches of evil Russians.

In the first of three sections, muscle-brain moves around a Russian fortress searching for his imprisoned Colonel. Once old Trautman is rescued, Rambo makes his way North through the second section. The final part takes place in Operation Red Eye, a familiar number along in a stolen tank, towards the logarithmic border.

It seems you may not like the lack of a snorting play area (which could have easily been added) but Rambo off's appeal lies in its cross-breeding of arcade-adventure action.

Leaping walls, with wooden floors, rooms, walls and objects all featuring low-key shading. Rambo III features high

graphic detail.

Mistakes are easy to make and, due to a lack of save option, having to repeat missions becomes tiresome and lessens the game's appeal. However, this type of



game is still quite rare on 16-bit and as such is entertaining enough to repeat a task.

ATARI ST OVERALL 70%

COMMODORE 64/128: **RAMBO III 72%**

SPECTRUM: **TQM016 72%**

Armed, loaded and trucks are around in constant car there is big fuel and big drive. Left: Froggy want a meeting and the star view, Rambo III.

LOITERING WITHIN TENT

CIRCUS GAMES

Tynescott

Ladies and gentlemen, boys and girls, we proudly present...Warren, the famous Birmingham artiste. Watch and wonder as Warren competes in international circus competition...! Now every Tom, Dick and TQM reviewer can experience the thrills of performing amazing feats in the Big Top.

The games are standard for multi-event games: you practise events or compete in one or all of them. Up to four players can take part and be human- or computer-controlled.

The diving heights of the Big Top are tackled first with the devious *Saltator* at tightrope walking. Balance is kept by adjusting the pole you carry, but to gain substantial points you must perform tricks while traversing the gently swaying rope: somersaults, hand-

cartwheels and somersault as you go, then a double or triple somersault before being caught by a second rope.

This final event is the most dangerous — training extremely ferocious tigers. You attempt to guide three hungry tigers across an obstacle course, using a whip as an incentive. A wary eye should be kept on the figure's Threat Meter! — they tend not to like being told what to do. A chair can be used to keep them at bay, but

it's all too easy to become a lady tiger-trait.

A circus olympics is an original, if silly, idea, but disappointment is expected even before the game is loaded, as there are only four events (three). And because the title isn't exceptional, *Circus Games* is doomed to limited latability.

The difficulty level for each event is constant across the versions: tightrope walking is quite easy, tiger taming too difficult, but more importantly none of the acts hold attention for long.

Circus Games is simply too expensive for what little entertainment it offers.

PC
£24.95

Colour-reflective CGA is the only graphics option available, so all the fun of the circus is a weird mixture of aqua blue and pale purple. This aside, graphical presentation is reasonable, and surprisingly, the PC gives the best rendition of the mean circus tone.

OVERALL 42%

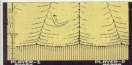
COMMODORE 64/128

Cassette: £9.95

Diskette: £14.95

Possibly backdrops are suited by muted sprites. Tightrope walking is made extremely difficult by the walker design: it is often impossible to tell which way the footman walks in the picture. Various tames further away in the background, made worse by the lack of sound effects.

OVERALL 40%



He walks through the air with the greatest of ease, on the flying rope! — Spectrum screen

stand, cartwheels, and a 180 turn. And, one of your three lives is lost. Success leads you to the second stage, where the wire is crossed on a unicycle.

Performing a quick air change (not part of your act), you become *temple* (aun back horse rider and, once in the saddle, attempt to perform a number of moves. Stand, sit, handstand, jump to left or right, spin left or right, and somersault are required for the set move sequences.

Nothing more than felines

Up in the air again to be a daring young man on the flying trapeze. Left and right movements build up your twirling speed and a plain view (blow) you what the sequence means (visual) together. In your three-part performance, you first swing both trapeze to trapeze, then perform a

SPECTRUM Cassette: £8.95 Diskette: £14.95

Middle of the road sprites often become obscured in the detailed monochrome backgrounds, and the ring master gradually becomes more of a mess as the competition progresses. When colour is used on characters, the update is slow, so that it lags behind the sprites.

OVERALL 38%



Caution: are emulating Warren? Ring Lightness (often) makes the way across the wire. (C64) — Next (often) is a job to make it across on a great wire while juggling three cats and an owl and following a stick of fluters on the grid or the nose — Amiga screen

AMIGA
£24.95

Pleasant almost cartoon support adequately defined and animated sprites. The graphical highlight is the tiger taming — the Big Cats walk with graceful realism. One or two sampled sound effects and mildly irritating circus tones are an unimpressive sound track.

OVERALL 43%

OTHER FORMATS

ST (£29.95) and Amstrad (amstrad) (25.95), Diskette (£14.95) to follow shortly.

"Circus Games is doomed to limited latability"

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MPS 1200P

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A TECHNICAL CHARACTERISTICS

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TRANSLATION SPEED	7 dots/sec
PRINTING DIRECTION	Bi-directional, with optional fixed horizontal
PROPERTIES	Character set / Character set / Character set / Character set / Character set / Character set / Character set / Character set
LINE FEED	— 100 / 110 / 120 / 130 / 140 / 150 / 160 / 170 / 180 / 190 / 200 / 210 / 220 / 230 / 240 / 250 / 260 / 270 / 280 / 290 / 300 / 310 / 320 / 330 / 340 / 350 / 360 / 370 / 380 / 390 / 400 / 410 / 420 / 430 / 440 / 450 / 460 / 470 / 480 / 490 / 500 / 510 / 520 / 530 / 540 / 550 / 560 / 570 / 580 / 590 / 600 / 610 / 620 / 630 / 640 / 650 / 660 / 670 / 680 / 690 / 700 / 710 / 720 / 730 / 740 / 750 / 760 / 770 / 780 / 790 / 800 / 810 / 820 / 830 / 840 / 850 / 860 / 870 / 880 / 890 / 900 / 910 / 920 / 930 / 940 / 950 / 960 / 970 / 980 / 990 / 1000 / 1010 / 1020 / 1030 / 1040 / 1050 / 1060 / 1070 / 1080 / 1090 / 1100 / 1110 / 1120 / 1130 / 1140 / 1150 / 1160 / 1170 / 1180 / 1190 / 1200 / 1210 / 1220 / 1230 / 1240 / 1250 / 1260 / 1270 / 1280 / 1290 / 1300 / 1310 / 1320 / 1330 / 1340 / 1350 / 1360 / 1370 / 1380 / 1390 / 1400 / 1410 / 1420 / 1430 / 1440 / 1450 / 1460 / 1470 / 1480 / 1490 / 1500 / 1510 / 1520 / 1530 / 1540 / 1550 / 1560 / 1570 / 1580 / 1590 / 1600 / 1610 / 1620 / 1630 / 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DIRK MEETS AN OLD FLAME

DRAGON'S LAIR

ReadySoft/Entertainment International

In 1983, a coin-op appeared in the arcades which caused quite a storm and developed a cult following. Though six years in the field of 10p-waters, *Dragon's Lair* still generates interest, as shown by the response to our feature on *Journey Into the Lair* — a laser disc game for the ST based on the coin-op — in TGM009. It was translated to 8-bit pixels by Software Projects, but now it's time for the graphical power of the Amiga to be seen, courtesy of programmers, *Visiquest Design Technologies*.

The hero of the tale is one Dirk the Daring, a brave and derring-do knight who is also a bit of a fool. Like all characters in the game, he was created by ex-Disney artist Don Bluth. Whatever his shortcomings, Dirk likes to do what might be best versus himself in defense. In this case the fair maiden is Daphne, a princess trapped deep inside a huge, spooky and powdered castle. Captured by Garg, the less-than-potent dragon, she is held in it's treasure-chest domain — the dragon's lair.

It isn't just a case of strolling through the echoey chambers and

spooking the dragon, oh no — it wouldn't be much of a game if it was. The castle's various rooms and tunnels are guarded by tricky traps of various and strange design, and are inhabited by a motley crew of boons, malice and beasts.

First crossing a rickety drawbridge above a lava-filled infernal moat, you influence the actions of the adventure using the four main joystick directions and the fire button for a hefty sword swing. Objects and portals often flash to indicate possible directions or actions, but can also signify dan-



"Oh out in the big picture room, you're pulled out the plug!" Water very high. The impressive 3D mode (above) shows Dirk fighting a scary chamber maiden as it leaps from the cooking pot — Amiga screens

ger. Timing is important for all those — one slip and Dirk loses one of his three precious lives, usually in a violent or amusing manner. Points are awarded according to the difficulty and number of moves needed to the finish.

Dirk's disks

Dragon's Lair, the coin-op, uses a laser disc, a high-density storage medium akin to a giant compact disc which can hold a large amount of quality images and sound. For accurate translation, a huge amount of data is needed — 150 Megabytes in fact! This has been compressed to fit onto six Amiga disks, but even then, a Megabyte of memory is needed



This is how it looks in high-res mode — more the same really with slightly more game area but no sound effects

for \$20K (or \$1500 owners) — and a second drive is helpful.

Being essentially an interactive cartoon, joystick moves don't directly mirror what Dirk needs to do, so approximations have to be made. Finding the right move can be a matter of trial and error (and, like the comic, Dirk doesn't instantly react to hitting a mouse can lead you to believe the wrong one was made).

Dragon's Lair fans won't find the gameplay a problem and should instantly warm to this conversion, but those unfamiliar with Dirk's joystick may find response frustrating.

With no continue-play facility and only three lives, having to start again after making progress through the disks may have you eating your monitor in frustration. The feeling of satisfaction when a scene is completed is tremendous, however, and makes the effort worthwhile.

Fans of the coin-up and anyone willing to try an original game format will be rewarded with this accurate translation of the compelling cartoon adventure.



Top: Dirk's daring deeds seemly are deemed dangerous deeds in the darkly dragon's domain. Middle screen is the...
Caption: Brother smiling back across the ROTTING TANKS

(middle line) of the dragon's lair. Jump for the flashing bits (left) or you'll fall to your doom... but the way it goes...
— *Dragon's Lair*

AMIGA £44.95

Considering jumping into The Lair costs £120 plus the price of a laser disc player — Amiga owners aren't paying too high a price as both graphics and sound are as close to the original as anyone could reasonably expect. Backgrounds are faithful to the coin-up — brilliant use of colour and shading — and although the moving characters have relatively few colours and are simply outlined in black they're superbly animated, exactly as they are in the coin-up. There's even a horse mode where graphics are condensed into a small area making the game virtually indistinguishable from the original. Jingles and a plethora of realistic sound effects are all superb, and although there's a lack of music here, they combine with the visuals to create a magical atmosphere. Impressive.

OVERALL 81%

OTHER FORMATS

8-bit versions have been around for a while, BT owners will have to spend several hundred pounds on a laser disc system or the PC version, etc.

"The feeling of satisfaction when a scene is completed is tremendous"

LED-FREE

The new machine

STAR
PLAYER

Great road-building, even without war, or so we're told (ESP to believe) — CD-ROM

LED STORM

US: Gold

Hitting the accelerator, your LED machine's wheels squeal as you roar away from the starting line in a cloud of burning rubber. In the distant future, car racing is even more thrilling than today's high-speed competitions. Ideas and goals remain the same, but circuits are refreshingly futuristic.

Your objective, like many games before it, is to make it through each stage within a time limit. In this case, time takes the form of decreasing energy — topped up by collecting coins en route or from passing faster vehicles.

All self-respecting LED racers take a page from the metal policy in the fight to win. But to complicate matters, cars, motorcycles, jeeps, tanks, oil, grease, chains and holes in the road pose problems.

Stormy rerun

A normal automobile wouldn't get this year's air vents of the circuit. Luckily, your Storm II race is state-of-the-art four-wheel driving. Along with a phenomenally snail-throop engine (thinkering under the bonnet), an awesome no-control chassis and a specially strengthened shell, your Storm II has the unique ability to turbo-hop over obstacles.

To spell your aerial fun, mutants roam, hop along looking for cars to hang onto, shake them off or jump over them, otherwise you're grounded.

As well as a car to be proud of, a 3.1 navigating computer is free

onboard. Unfortunately it's pretty only useful at navigating — it's up to you to keep the car on the road and avoid collision in your race to the north checkpoint, Sky City.

Software Creations (Bionic Commanders) have created a good, fast-paced race game. And, while lacking variety, the simple nature of LED Storm keeps addiction levels high and makes a strong compulsion to progress.



Monochrome but fun: Spectrum LED Storm

ATARI ST

£19.99

While faster than 4-bit versions, this game is remarkably easy to get into. Sporting good graphics (mostly) and decent controls, the artwork isn't smooth. Unfortunately the side-scrolling parallax effect has been omitted.

OVERALL 71%

AMIGA

£19.99

Guess what? Yes, another port arrives from the ST. Good rather than very good graphics (mostly), with colours restricted to the ST's palette. This makes it look exactly like the ST game complete with push-screen scrolling, tacky graphics (not affected to a major degree).

OVERALL 67%

COMMODORE 64/128

Cassette: £9.99,

Diskette: £14.99

Software Creations's trademarks come to light with funky soundtracks and professional presentation, but, surprisingly, scrolling backgrounds are graphically basic. It may look slower than the real deal but it's by no means easier — thanks to ramshackle cars and scolding energy levels which leave little margin for error.

OVERALL 74%



(Disappointingly similar to the ST but the music is great) — and of course it plays very well (not the word) — Amiga screen

E MOTORING

SPECTRUM 48/128

Cassette: £8.99.
Diskette: £12.99

As fast as the ST game but without the colours, Spectrum 480 is hectic to play, featuring an extremely rippy car and highly viscous road cases. Super-smooth and highly reflective graphics scrolling together with great 128K music and sound effects give the game a class finish — though backgrounds are generally bland.

OVERALL 76%

OTHER FORMATS

Wipe out the 480K space on Amstrad (Cassette: £8.99, Diskette: £14.99) and PC (£25.99).

**"State-of-the-art
four wheel driving"**



Really future racing, who needs it, it's all a storm in an ST cup

VERSION UPDATE

CASTLEVANIA Excell

Nintendo £29.95

ORIGINALLY released by Konami for the MSX (under the title Vampire Killer), Nintendo — knowing a good game when they see one — have licensed this blood-busting arcade adventure for their console.

Count Dracula is being a pain in the neck again, sucking blood left, right and centre. The wacky town of Draculaemia has suffered many an attack by the prince of darkness, therefore a hero is chosen to kill the Count. Armed with only a whip, simple Simon arrives at the gates of Dracula's pad: there's the basement, cavern, tomb, graveyard and deep inside Dracula's home is the many minions slave to the rule of the undead.

To help Simon battle through weapons and special objects are available to find and use — 15 in all, with a variety of powers and effects on the mansion's inhabitants. Many enemies require more than just a taste of the whip to fend from playing.

An energy level for each life, rather than straightforward death-on-contact, gives you a whopping

chance, and adds to playability.

Castlevania is more arcade oriented than the MSX version, bugs are no longer tolerated and there are short-term objectives to

complete the next level. Unfortunately, infinite continues plays are too generous, making progression easier than it should be.

Graphically, Castlevania is among the best Nintendo games, featuring constantly changing backdrops and many highly detailed sprites. Naturally, it is a

real treat: music captures the mood of each level, getting ever more spooky as you near the tomb of Dracula.

**OVERALL 71%
MAX: TOMB2 86%**

Ghost-busting monster-bashing action is a 1985 Vampire Killer



VERSION UPDATE

OPERATION WOLF

Osami

AMIGA: £24.95
ATARI ST: £19.95

THE slightly sealed conversion of Operation Wolf, the smash hit's come-up, is 100% promises everything — have Osami delivered!

Gleaming graphics gained more or less credit from the coin-op, the two versions are visually identical, displaying detailed backdrops and animated between-stage screens.

The ST falls down with maddening musical pieces, quiet but clear sampled speech and music (the other hand the Amiga provides) loud speech, beated up explosions and solid music based around excellent use of talking drums.

In play, the Amiga is faster but very difficult — useless and bullet moves too quickly your chances of survival are slim. This renders the game mildly frustrating — but is in keeping with the coin-op.

The ST version's slightly slower (but just so enough) horizontally-scrolling stages give you a little more time to think and keep the situation under control, allowing steady progression. This makes play a shade dull, resulting in a lack of long-term appeal. The constant disk swapping gets tedious too.



Take a look, have a blast and enjoy it, but don't expect it to be the best thing yet.

AMIGA OVERALL 82%
ATARI ST OVERALL 77%

SPECTRUM: TGM013
87%

AMSTRAD CPC: TGM013
89%

C64: TGM013 79%

There, if you're a real mean dude you could accidentally win points about the halfway by mistake (just top alone on the ST). The Camouflage Combat formation game team put this demonstration for you — Amiga screen

VERSION UPDATE

R-TYPE

Electric Dreams

COMMODORE 64/128
Cassette: £9.99,
Diskette: £14.99

THE first coin-op, R-Type, is enjoying a new lease of life thanks to superb conversions to Spectrum and ST (see last issue). Paintbox R's — the game with a finger in the Russian pie — are responsible for the C64 conversion.

From a technical point of view, R-Type is a horizontally scrolling fastlane clone, improving on the concept with the addition of an appreciable R-Type drone.

Sprites are small and hence less definition, but colour is limited to shades which create subtle, attractive levels — not in the Amiga class though.

Of course, what is the fading in and out of background graphics on your PS shows the alien forces on level one.

Of less-than-worthy note is the horrendous cassette loading system. Even failing to complete level one is rewarded with having to reload the level again.



This alternates long term appeal.

Playable late certainly, but aside from its name, there's not a lot in R-Type to make it stand out from the crowd.

OVERALL 85%

ATARI ST: TGM016 82%

SPECTRUM: TGM016
90%

It may have all the ingredients of a stage shoot 'em-up, but they don't quite gel. It's not a bad shoot though.

WEC LE MANS

24

WEC Le Mans is the 24-hour world endurance championship. All other races pale in comparison. No other race challenges a driver physically or emotionally as WEC Le Mans 24. The racer must push

himself and his car far beyond limits required by any other race. He must use his sixth sense as he becomes one with a machine which is perilously insensitive to human frailties.



WEC Le Mans is not a game – it is the ultimate driving experience



ATARI ST

£19.95

ATARI ST



AMIGA

£24.95

AMIGA



COMMODORE

£9.95

AMSTRAD

SPECTRUM



the name
of the game

A HELSING HAND

NIGHT HUNTER

Ubi Soft

Whats the most popular subject matter for computer games? Space aliens. Apart from aliens? Sport. OK. Apart from sport and aliens, what might be the most popular? Think of horror. Not glibly? No, something undead. Have they done a computer version of *Hearts Of Gold* then? Think teeth. I was! Forget it! Since the dawn of computer games, *Dracula* has been one of the most popular subject matters for software. Oh.

Many modellers have helped keep Count Dracula and his notorious henchmen under control. But oh how the prince of darkness thrives! He plots to steal the medallion, create a bit of chaos and eventually rule the world. A vain hope?

Professor Van Helsing fears of Dracula plots and forms an army of what the packaging calls "anti-

enough gets grabbed by the throat and sucked dry, to suitably disturbing sound effects.

Corpse blimey

It doesn't sit so *Dracula* style though, the army consists of men armed with bows and arrows (Drac himself is not a bit of



Keep collecting those keys and you'll be finished in under a day's time

All the guy-squid run-als to stand and stare as his blood is sucked dry

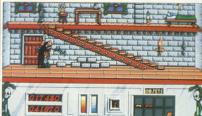
ATARI ST
£19.99

interesting, but repetitive music (save the way for some great in-game effects—particularly the blood-sucking sound as Drac squashes the throat). Animation of all characters is brilliant and the Count's transformation sequence is very life. Door keys are difficult to spot in places but the game makes allowances (even graphics of each screen (or should that be screen?)) Ubi Soft have been quite for some time. *Night Hunter* forwards their welcome—translating to the land of the semi-living.

OVERALL 81%

"Brilliant sound effects, well animated characters and suitably spooky backdrops"

Nothing to disturb the rest of the night but the sound of sucking "it" calls



vampire-fighter. This could spell disaster for Van Helsing as every-thing would be fighting him. "Cause they're definitely anti-vampires. Luckily the army he creates is actually made up of vampire-fighters — otherwise the job would be in a grimy situation — they set traps for Drac and allow the population of their village.

Now for the rest... You play *Dracula* but this must be the French revamped version, as the count is able to not only turn into a bat but also a werewolf (but they can't keep him at bay). This comes in handy for draining water and stuffing up Van Helsing's army on your quest to find the medallion. Drac himself is no pushover when his goose gets low, a stick press of the fire button and any human close

at hand, holy water, salt and bats. There are also flying green witches who suckle as they launch magic attacks on Drac (giving him a green witch mean time). Luckily there are no deaths in the game. Drac is fed when he's been on the scene. On later levels the count faces battles with obstacles to beat, loads of grey and green yellow men. But the deadliest adversary of all is the post. He turns up at the end of each level, one of his slaves and our anti-hero is turned to dust — he should try the local club.

Consisting of 20 levels, the aim is to proceed and eventually succeed (or suck blood) by finding and collecting five keys and three combinations in each. A code-word system prevents you having to start new games from level one.

Basically an arcade adventure, *Night Hunter* stands out from the rest due to its brilliant sound effects, well animated characters and suitably spooky backdrops. The only drawback is Dracula's slow response. Standing there taking away after after arrow is not the way to win, but the bloody ramping Ubi Soft! Dracula down until he's taken about three through that cold heart of his. Very frustrating, especially when Van Helsing serves up his deadly stakes.

OTHER FORMATS

You can soon get your tooth into versions for the Amiga, PC (£18.99), C64, Spectrum and Amstrad (Diskette £14.99).

MARSHAL ARTS

WANTED

Informant

Ever fancied yourself as a rooin', tootin', son-of-a-gun whose job it is to clean up a wild west town which ain't big enough for the both of us? Like to mimic John Wayne's drawl and the menacing whisper of the man with no name? Then look no further than Informant's latest release, partner!

There must be something about Americans which attracts the worst sort of people. In 1880, there are four real heats slated up to no good, and their boss is even tougher. Not only this, but lots of bad guys have joined them to make sure they win the west and bag all the loot.

Lucky, you're the toughest, toughest, sharpest-shooting bounty hunter who ever cooked a six-shooter — and the people of Arkansas have put a price on the gang's heads that you simply can't resist. Drawing your legged-up cowboy hat and spurs, first judge single judge, you fall out to take the bad men to Boot Hill.

A mighty fine shootin' iron

Before the shoot-out begins, you choose your target from a group of four wanted posters. Bounty ranges from \$2,000 to 75,000 determining the bad guy's toughness and the level's difficulty. All mid- or high-level bounties must be paid out at once.

before their boss is tackled.

An aerial view of your pistol-popping rival partner is shown in vertically-scrolling scenes and features without bad guys running towards you or taking cover — but mostly spraying bullets in your direction. Luckily, you're armed with a pair of pretty sweet pistols which fire in three directions at once — you take this multiple power with three (you begin with three).

Throwing dynamite has a smart bomb effect, wiping out all enemies at once, but you only have three shots to begin with. As with



gun firepower and ammunition reserves, dynamite is gained by picking up an appropriate icon, as revealed by shopping carts. Also available are tools to help you money faster, rifles for long range, trapdoors, and a sheriff's star to

The man with no name has got the outlaws over a barrel — if he watch as the bats in time.

speed up the level. Hearts symbolize an extra life, a money bag gives bonus points, and a shield makes you invincible for a limited time. Add-on icons are lost with each life, and six are taken if you pick up a shield.

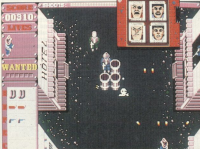
Wanted has the Commando label stamped firmly on a bullet-direction weapons and speed-up have been added to the simple shoot-and-run action but gaming remains limited.

However, the mindless shoot-'em-up fun is undeniably fun (if difficult) for a limited period.

AMIGA €19.95

A comical theme tune precedes the game, complete with horse hooves, bangs and cowboy choros. Game graphics are a cheap, point-and-click wanted posters are crude, sprites lack believable detail and are badly animated. The only skillfully-fashioned graphics is the hat on your spitter's head! Sampled gun sounds and silly screams — some bad guys' sound like sheep as they turn into skeletal corpses — are the only in-game audio.

OVERALL 60%



ATARI ST €19.95

Other than minor points of definition and coloration, the ST version looks and behaves pretty much the same as the Amiga. Sound effects are replaced with bops which lose the game its atmosphere, and the title tune is less complex.

OVERALL 50%

This town ain't big enough for the both of us. Your pistol-popping rival partner flicks his eye to the top of the screen and the boss-man.

Draw the four badly-caricatured who have to be sent to Boot Hill before the gang leader can be tackled.

OTHER FORMATS

None planned

"Single shoot-and-run action"

A TIGHTS SITUATION

SUPERMAN: THE MAN OF STEEL

Tynesoft

Before we had superheroes to save our puny world from domination or destruction by supervillains, there weren't actually any supervillains around to worry about. If heroes hadn't come along, perhaps the supervillain would never have surfaced? If so, it's Superman and his buddies' fault that the world is in peril 24 hours a day... who needs heroes?

Totally, Earth is being torn apart by volcanic eruptions and earthquakes.

Terrible! Heroes have injected a yield to this world, and the governor of Metropolis ordered — and guess what? behind it all? Yeah, supervillains.

In this instance it's Darkside and Lex Luthor who've teamed up to bring Earth to her knees.

Cleaving device

A comic clip introduces each of the game's eight levels and explains something of what you, as Superman, have to do in them.

During your race against time, only certain of your powers are available in each level, such as super-

breath, heat-vision or flight. These powers quickly drain from either over-use or taking hits, other abilities are intended to give time for spent powers to replenish.

Levels consist of first-person views from behind, above or to the side of the man of steel. And the action comprises of such heroic deeds as fighting off demons, protecting satellites from asteroids and dealing with deadly viruses.

Tynesoft were assisted by DC Comics as to how to treat their man of steel and hence the fights in a real-life situation — he can only fail.



Superman protects the space shuttle from burning asteroids — CBI screen

ATARI ST £24.95

A slightly warby rendition of the theme from Superman The Movie heralds what is visually a very attractive game. Control can be tricky in places but the slick animation and artwork used, more than make up for it. The scene where Superman spectacularly makes his bidness of solitude after losing the battle is particularly atmospheric (you get to see this section a lot). What does ruin the game is the fact that you are sent right back to the start of level one every time you fail. This ruins the incentive to get anywhere and thus the will to play. Tynesoft would have an excellent game on their hands were it not for this stupid idiosyncrasy.

OVERALL 43%



ST screenshot

OTHER FORMATS

The red, yellow and blue average should be making a nice change to Amiga, PC (£24.95), Amstrad (Amstrad £24.95), Ataris (Atari £24.95), Commodore (Commodore £24.95), disks (£19.95) as you read this.

COMMODORE 64/128

Cassette: £3.95

Diskette: £14.95

The theme music is good, but that's about all. Although the little Superman sprite is quite nicely drawn/animated and you have a choice of three skill levels, the fact that he doesn't die makes the game ridiculously easy. I bristled at by sitting back and letting the thing run on its own — the congratulatory screens are quite nice though. The only incentive to play is to get a good score — the fun is taken out of the game by having to sit around and porpoise, infinite time. For Superman to fall (as in the ST game) on cassette versions would mean lots of frustrating tape rewinding and re-recording.

OVERALL 58%



The atmospheric scene where Deputy-Dave gets off depressed in his Fortress of Solitude — "can't be the alien"

"He fights in a no-die situation"

VERSION UPDATE

BATMAN
DC:BM

Atari ST: £19.95

POWER to the Batmobile, engage Bat-disk in Bat-computer and utilize Bat-panels for Cointel's Coped Crusader conversion.

Batman is split into two independent parts (the game, not the hero), both involving a reasonably unimpressive cartoon life.

Part one sets the Dark Knight against the Penguin who's causing mayhem from the central computer in his mansion. The latter part two features Robin kidnapped by the Joker and forced pointed beneath the Bat-cave.

Both are played in a similar manner (the Wayne mansion's headquarters) and various input devices are loaded with fighting moves, often at the cost of energy. Objects are picked up, dropped or



Sophisticated multiple windows, plenty of stunts and punches, but no killing... Batman on the ST

used in the course of solving the arcade adventures.

Supplied on two disks, the name of the TV programmer's music chimes on (but with amusing Austrian stop-dancing percussion) from the title screen. Occasional ineffective sound effects are an option.

The large, detailed Batman spins walls menacingly, but always gaps slightly when facing you (wonder why), and his punches are poorly animated. Other characters and backgrounds are colourful and well-drawn. Bat guys remain annoyingly damaging.

A game better suited to 8-bits but an worthy of some hours head-bonking and joystick-twisting on the ST.

ATARI ST: OVERALL 75%

COMMODORE 64/128:
TGM015 71%

SPECTRUM 48/128:
TGM015 78%

VERSION UPDATE

HEROES OF THE LANCE
US Gold

Amiga: £24.99
Amstrad CPG, Spectrum
48/128: Cassette £9.99,
Diskette £14.99

SIX heroes of the lance enter the remote city of Kha. Thanks to the usual, well-known, chain of releases, with which they fight to rid Khayn of demon dragons. Taking the form of a multi-character combat game with exposition overtones, Heroes Of The Lance was limited to cover the action side of the classic RPG.

Amiga Heroes is a straight-forward conversion which had made no effort to improve the limiting shooting, poor sound or slow animation of its predecessor. Technically the game takes a significant step forwards.

That's the good news! The



Fast paced battle, responsive controls — but of course it's a sword game a bit over-saturated — Heroes on Amiga

Amiga brings the best: use of colour is limited to the extreme, basically consisting of pink and grey (very subtle). Game speed is fast, but this is due to the machine only having to move poorly animated single colour sprites around.

On the Spectrum, things are a little better — if only because the potentially horrendous use of colours is absent. Shooting is fast, animation responsiveness and control amounts to two matchsticks feeble tapping are another.

The fact that there's very little difference between the Amiga and Spectrum versions, takes the game to credibility.

AMIGA: OVERALL 44%
AMSTRAD: OVERALL
30%
SPECTRUM: OVERALL
35%

ATARI ST: TGM012 78%



Displaying here an originally CR game can go to hell — in this case when it turned up on an Amiga-like screen

Free Computer Games.

(What are Boots playing at?)



Example of free budget title



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KORT BY THE MULTIPLES

PHANTOM FIGHTER

Marble

Curiously killed the cat, so they say. This could be the case for the people of Farnozark, though their ventures into the galaxy were generally fueled by desperation — the common problem of overpopulation forcing colony ships out to search for new homes. One such target, the planet Korbin, was hospitable yet unnervingly familiar; the elders likened it to Farnozark in its early stages of civilization.

Indigenous lifeforms (Rakks), knowing when they weren't wanted, took to hiding in the badlands of the planet. A colony ship was sent out to destroy them but failed to return.

This is where you enter the story. With an alien, MacMcDune, as a co-pilot, you pilot a ship to the badlands and witness a startling sight: a fleet of ships, swift from all over the star system and even from different times. The fleet speed past you and destroy your colony.

MacMcDune tells you of the dark years of Farnozark. The

people were superstitious and went into the wilderness when they felt their death was near to justify their souls by killing evil forces. Mac was the only person ever to return, and he stole the colony fleet as was hiding in the Korbin badlands.

Bury elders

He is now dead, but you are the Phantom Fighter, destined to destroy the strange fleet and free the people of all alien ships to them. To do this, your ship is armed with an adjustable laser to blast waves of death.



To help you, particularly against the big, ity-randy and of low guardians, some destroyed waves leave slots behind to enhance your ship's powers.

Since shoot-'em-ups are rare and far between on 16-bit machines, Phantom Fighter is a welcome release to help fill the gap. Fast direction, alien light formations and smooth scrolling are the standout and Phantom Fighter features these along with sharp control response and good graphics.

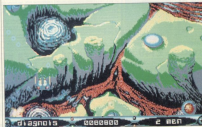
You can look at this pretty picture while your waiting for battle to commence — Amiga screen

ice. Switching scrolling directions dampens the Amiga game, and though the PC entry scrolls vertically, it retains depth with its additional weapons, such as Friends, Defenders, and Whisked 'N.

Phantom Fighter is a difficult but playable arcade game which will deserves a place in your software collection.



Hit the Flying Battled (as it's affectionately known) through the Gyroves of Zogun (above), Destroy PG shoot-around within seconds the Rakks (above) of the badlands (below) — Start in the air?



AMIGA £24.99

The graphics are not quite arcade quality but are certainly well drawn, with sprites moving rapidly across effective, animated backgrounds. Your ship is a very cumbersome looking vehicle but deals out some heavy damage. And it needs to, as alien ships adapt their attack patterns to home in on you. Music and sound effects are disappointing but are not detrimental to the basic gameplay.

OVERALL 78%

PC £24.99

Supporting VGA, the status area feels is quite realistic and, like most games, is attractively shaded. Graphics are static in places, but on the whole, show the PC's capabilities. With a bouncing screen effect and 20 types of weaponry, Phantom Fighter has features which make it the best shoot-'em-up on the PC to date.

OVERALL 80%

OTHER FORMATS

None planned

"Fast, attractive alien flight formations and smooth scrolling"

LAST STAND

CUSTODIAN

Review

If you hear anyone describe Hewson's latest game as "ancient" or "dead," don't think they're being critical of the multi-direction shoot-'em-up: It's set within a tomb. A tomb of the future, on another world, where gleaming metal and sophisticated electronic devices make up the chambers. The dead and the decorated facades are defended by... The Custodian.

As a squat synthetic brain and weapons module on legs, you're not a pretty easy time if it taking care of your designated tomb. Fighting for yourself and the quiet hum of machinery to keep you company.

Most things are far from peaceful. Attacks have included, instead of stealing energy and strength with which to lose to themselves, and they're not likely to be scared off by a single Custodian robot. They're already pointed Pods, which even now are draining the tomb's power source.

Guiding the robot both on foot and in jet-pack flight, your main aim is to collect the Pods before they drain at the tomb's energy. The thinking allows you to prevent you from doing this: Being hit by them or their missiles reduces your own energy. To rebel, you

advantage of with credits — those double as a scoring system.

To your credit

You've earned 1000 credits when you begin the game and approximately 24 for each alien destroyed. The ten types of weapons available cost between one and 500 credits and include Ramson 15mm rocket shells, Trident vertical rockets, diagonal laser beams, and Magician smart bombs.

To help you travel quickly around the tomb, there are teleport devices, which, although costing 100 credits to use, give back energy points.

Hewson appears to be in the market of creating dead from their own games, as Custodian has quickly recognizable similarities

as the Custodian robot does) and you have a finite supply of respawning, only one type may be used at once.

The credits and ammunition system works well — particularly so you can gather a small amount right at the start. X10 scoring rules are particularly brilliant, rewarding your robot and gathering credits while leaving you to concentrate on other matters.

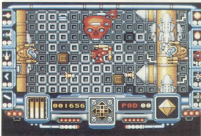
Areas of the tomb are largely uninteresting, but this is the price you pay for having a large scrolling play area rather than the miniature screen-by-screen technique of Cybernet.

Other certainly playable and a quality shoot 'em up, arduous adventure. Custodian doesn't have the appeal of the aging space and so is destined for short-lived attention.



Today's special offers 2 credits of Ramson 15mm rockets and two Magician smart bombs for the price of one! — ST screen

Zoom around the tomb or zoom it will zoom its doom — Design screen



begin with a full complement of 99 available tunnels — short-lived, automatic hovering guns.

Your robot has multi-weapon capabilities which are taken

with Cybernet and its sequel. Your spirit is controlled in the same manner (Cybernet, the ship, didn't have legs but moved smoothly over horizontal surfaces

AMIGA £19.99

Custodian has the general appearance of a graphically polished 684 shoot-'em-up. Detailed sprites, colorful in black and white, and varied sound schemes give the game a lively appearance. Animation is smooth and the music sounds like a series of (optional) sound effects also bring on feelings of déjà vu.

OVERALL 70%

ATARI ST £19.99

Similar to the Amiga version except in the layout department, where the ST's simple audio facilities do their best without resorting to sampling.

OVERALL 70%

OTHER FORMATS

8-bit formats are planned for the second half of the year.

"The credits and ammunition system works well"

GONE FOR A BURTON

Enter, already? Nemesis upon Nemesis spans out from the huge robot... or, Nemesis!

NEMESIS III: THE EVE OF DESTRUCTION

Konami

Nearly 200 years after the Salamander wars the artificial intelligence computer Gaudi picked up time and space disturbances. The Bastorions, it seemed, have travelled to another time to cause havoc.

Tracing their path and possible reactions, Gaudi learned that the Bastorions had gone back two centuries — their plan is to kill James Butler, son of previous Nemesis battles, before he can learn and hence negate all resistance to their evil plans.

Unbeknownst to the Bastorions, James fathered many sons, among them David — an ace pilot with the same high GXP rating as daddy. With fire in his heart, David strapped himself to his vicious fighter to take on the Bastorions, go back in time to rescue dad and jump back to the present day for the final conflict.

At the start, any one of four classes of Vases is chosen to fly into combat. Each has its own type of arsenal in buildup on.

Hunt the salamander

Though Nemesis II is not the official conclusion of Vase's venture from the first level, a third straight from the co-op. Super includes black holes that take your lives if you're in the place — another is set in a salamander-style time planet. The most entertaining though, is level 4 in which you are taken back in time through Nemesis I, Salamander AND Nemesis, facing all the old enemies, along the way!

Nemesis II is the logical game in the series so far. Everything is

on a truly massive scale from the front and with its five minute dual and visual introductory sequence through the stages and onto the astonishingly frenetic and level adventures. Shots to see and destroy include a fiery phoenix, an enormous (asteroid) head and the penultimate enemy, a full-

screen in flight, skeletal robot.

While the difficulty level of Nemesis II has been tepid in favour of the player, overall difficulty remains high. As hidden weapons and maps need to be found. Failing to do so takes you back into the fray — an unfortunate prospect even when armed

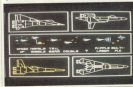
to the teeth.

With presentation, atmosphere and features to grant a very good quality, Nemesis II is the best of the series yet. While lacking the outstanding dual-player option of Salamander, Nemesis II is the best shoot-'em-up yet to grace the MSX screen.



Flying from the right, an awesome fiery Phoenix attempts to set your world on fire

The main screen at the game's beginning which allows you to select your fighter's add-on capabilities ready for the various battles ahead



MSX-UM 2 Mega-bit Cartridge. Price to be announced.

As ever the scrolling is pretty fine and in places graphic presentation isn't always perfect (a small black object appears when the giant flower in level two reappears, for example). The license problem is not noticeable due to the tough demands of saving and the latter becomes a minor fault when you consider the amount of game you're getting.

OVERALL 80%

"The biggest game in the series so far"

KONAMI SOFTWARE CLUB

The Konami Software Club newsletter has undergone change and is now quarterly and at the new price of £8.00. The magazine has been expanded to 24 pages and covers not only Konami titles across MSX and Nintendo formats but also conversions of Konami like Ocean. The address for the Konami Software Club is Shorwood House, 20 Courtyard Park, Newton Abbott, TQ9 7 2AB.

I'LL TAKE MANHATTAN

MANHUNTER — NEW YORK

Sierra On-Line

Though previous Sierra games have been reviewed as adventures, *Manhunter — New York* is their first release to rely almost totally on a mouse-driven environment. Indeed upon seeing minimal presence of text input and arcade sections (shock!) Rob Steel immediately handed it down to us lesser mortals on the reviewer's list.

Life is hard in the Big Apple — particularly if it's in the year 2024 — humans no longer control their own lives — the C.O.s have seen to that.

Two years ago they landed on Earth. Far from arriving with out-matched technology, they invaded and quietly enslaved the population. The C.O.s implanted tracking chips in humans and gave them the "freedom" of the Manhattan island area.

Fortunately the chips were faulty and not only let their signal when underground, but also failed to identify the wearer.

To keep track of possible subversive elements, the C.O.s chose selected humans to become *Manhunters*, and equipped them with MAD (*Manhunter Assignment Device*) tracking computers. It's their task to track down suspects and report their activities to the C.O.s.

Taking humanity in well and truly under alien rule, And you are a *Manhunter*. One particularly gloomy morning an O.C. enters your beat-up flat.

It orders you to investigate a mystery explosion at Bellevue Hospital. Any findings are to be reported back — and the C.O.s don't take no for an answer, time to go to work.

Your MAD

At the start of each investigation you consult your MAD computer to track the suspects. The MAD tells you at least three around Manhattan using a plan view to show their movements.

Each location they visit is noted and you are advised to go there yourself using a handy teleport facility.

Each location is fully graphical in representation, plots are searched for using the mouse. Finding them is easy, even if they're hidden from view. Moving the cursor around the screen reveals anything worthy of a closer look.

Clues are satisfyingly cryptic,

and in many ways the game unfolds the 4 futuristic detective movie as you piece together each investigation. Any names or identities uncovered can be picked up or via your MAD's info facility.

In keeping with previous Sierra games there are animated scenes for most actions, all quite human-

easily carried out, but some include gruesome sequences when things go wrong. A *Concussion* function along with a friendly continue play option are present for long term and risky play.

Arcade action sections are risky but simple and ultimately unnecessary.

So you really want to play? The *Police*, *State*, *State*, *State*! now catch up in the *First Shock* but credit thinking for American democracy!

OTHER FORMATS

Believe it or not the PC version (\$24.95) comes on 13 disks! Its Amiga version is planned for March — price to be confirmed. Perhaps the PC game will be bigger — with 13 disks to people with it should be!

ATARI ST £29.99

It won't win any prizes for graphics but it does create a realistic, if simplistic, atmosphere of a run down, oppressed metropolis. That it's spread across five disks belies the limited nature of the game.

OVERALL 87%

Those of you who thrive on Agatha-Christie style game plots with clues and puzzled mystery should appreciate *Manhunter — New York*. Problems are tough and independent investigations are cleverly intertwined to form an involved "adventure".

Unfortunately, there are no false trails to give more depth and, while varied, there aren't that many locations — less than twenty at the last count. A questionable departure from the norm for Sierra, but enjoyable to play.



"Problems are tough and independent investigations are cleverly intertwined"



Another day may be the one thing, but in 2024 it proves that you must've lived the life of a clock to think there's much to go on.

PEACE OFF

GALACTIC CONQUEROR

THUR



By the mid-21st Century, peace on Earth became a reality, people went about their lives happily — most of them that is. Some found it all too boring, particularly the strict peace-keeping force, who, tired of living in Yawmerville, rebel in an effort to take control of the planet. Galactic dog-fights followed and the Stellar League was created to protect the interplanetary military base, Gallon.

The war between the League and the rebels is in deadlock, neither side gaining advantage, but now Thunder Cloud II, a galactic fighter, is ready. Its firepower is 18,000 times greater than that of the original Thunder Cloud featured in *Star's Ark And Forget*, plus it has a negative emission ultra-sensational protection shield (and a vintage engine).

There's only problem: no-one's

skilled enough to pilot it. Eventually, however, you, being the latest champion of the Off-Street Battle (ought to be Off-Street Warrior), are chosen. Only you can restore peaceful order to the galaxy.

After a short practice fight, you're presented with a map of the solar system, with Gallon and its four moons in the center. Enemy

Asterbacter style edition, bearing exactly (Gallon's a Vector screen, yeah?) and attaining the nice shipy planet — Amiga screen

planets are shown as red circles and alien planets as blue. Strategic decisions are made as to which enemy planets you should attempt to purify. Planets affecting strategy are the galaxy of Gallon and its satellites, surveillance moons, and individual ally planets.

You world saver you

Once a world is chosen, a multi-ship releases Thunder Cloud II into the atmosphere and the first phase of attack is launched. Mines, probe robots, missiles and meteorites will fly in 3-D as you spin the planet's surface at full speed. Dodging left and right — vertical movement is restricted in this stage — wing-tip lasers destroy enemies while your shield gradually reverts itself.

There is no time system, but

ATARI ST
£19.99

Lack of colours in the multi-ship is partially compensated for by shading, but generally graphics are a little weak, as then the Amiga — the bonus is slightly better as it loads. Sound effects are sometimes simplistic — where the Amiga complex are used, there is only background noise.

OVERALL 62%

when your ship explodes, the planet explodes in the hands of the enemy, adding them to capture more worlds.

Phase two takes place at a higher altitude, allowing you to bank slowly to even fly upside down as you take on missiles, meteorites and, most importantly, the enemy fighter fleet.

For the last section, the battle continues out in space, where, as well as asteroids and enemy craft, you deal with imperial Enemy Ufo's.

Successful or otherwise, planets are locked until the enemy captures Gallon.

Galactic Conqueror has a very high standard of presentation, from the huge mothership which releases your ship, to the information which overlays the galaxy map, but unfortunately gameplay is repetitive. The fast, futuristic style action is fun but planets are very similar to each other and repeated such action.



Atmospheric sound and graphics combine beautifully on the interstellar map screen (just on the Amiga, as seen above, they do)

AMIGA
£24.99

The game impresses as well as the detailed mother ship scrolls into view. And the fast, smooth-moving horizon of the shoot-erupt action which follows is equally good, despite some tedious perspectives. The planets map section is excellent — very atmospheric, visually and soundly — but there isn't nearly enough gameplay in Galactic Conqueror.

OVERALL 63%

OTHER FORMATS

PC (£24.99) and Amstrad G4000 (£24.99), Amstrad G4000 (£24.99) available as we go to press. C64 and Spectrum versions to be released later in the year (at Amstrad prices).

"Wing-tip lasers destroy enemies while your shield gradually washes away"



No, failed your Thunder Cloud II is now returned to its former glory — ST screen

HOLY SHEETA!

LAST DUEL

US Gold

Last Duel concerns duality in that it involves the tribulations of twin planets, Mu and Bazuca. Being of a like nature, it seemed natural for them to join forces against all things hostile in the galaxy. This they did quite happily for decades. In the end, though, greed got in the way, as it often does, and intonation, intentional or otherwise, became not the sincerest form of flattery.

Bazuca had devoted more funds to weapons than Golden the inventor of Mu, and captured the lovely Princess Sheeta. She is being held somewhere in the remote new complex, and must be rescued to preserve the peace and future of Mu's people. Two heroic warriors have been found to control Mu's most advanced combat vehicles — a three-wheel car capable of leaping into the air and a space plane, both armed with rocket launchers — to fight their way to

Sheeta, and it is quite easy to accidentally try to locate aircraft when controlling the car, or land features when piloting the space plane.

In the coin-up market, particularly the huge shoot-'em-up field, only bog for all small medium-sized games are worth competing, unless the coin-up is something special that most people have overlooked.

Unfortunately, Last Duel is a bog-standard two-player game

with little interest added by the two vehicles and leaping car — shades of LED Storm here, with level three being particularly inspired from the racing game.

Dual is nothing amazing, but worth looking at if driving shoot-'em-ups are your thing.

AMSTRAD CPC
Cassette: £9.99,
Diskette: £14.99

A sticky yellow and orange status panel lies to the right, and carries feature bold outlines around eye-stinging colours. This is made worse by auditory scrolling, sound effects are annoying, vehicles and images. Control requires a thought.

OVERALL 55%



The oft-confusing collection of black-on-colour objects upon Spectrum Last Duel

I've double trouble flying through level two — beware the gun, but



AMIGA £19.99

This is a neat game, with colourful compact sprites moving over a smoothly scrolling (particularly — the occasional sideways movement is very janky) unobtrusive background. Colours slowly change as the scenery rolls or comes of a scene, a pleasant if unobtrusive effect. Amongst the standard samples are some nice metallic tints and tones, they match the sometimes grim but generally soothing theme tune.

OVERALL 70%



LED 65 — Last Duel offers lots of speedy lane-mapping, car-bodging fun on ST screen

SPECTRUM Cassette: £8.99, Diskette: £12.99

Vehicles are clearly shown but, with the detail in the background and ground features, things get confused in a mass of monochrome, particularly in a two-player game. Scrolling feels slightly fast at top speed. It tends to be as if you can avoid the annoying devices until that creep up behind you.

OVERALL 63%



Two of the terrible dragon jets show their ugly nags in this scene from the end of stage one — Amiga screen

ATARI ST
£19.99

Though it looks a bit like the Amiga version (player sprites are identical), it's a completely failed, making an already tricky game difficult. You could be an expert, but it doesn't suit Last Duel.

OVERALL 65%

The sprites of life

Extra enemy sprites are added for the flying player, less to

OTHER FORMATS

MSX cassette £9.99, diskette £14.99 out now.

"A bog-standard two-player game"

VIDEO VISIONS

351

■ **What's New:** In *What's New*, the author, who is a former editor of *Rolling Stone*, discusses the music scene of the 1990s. The book is a collection of short stories and essays. It is a must-read for anyone who loves music.

the late history of Spain — and in the legend she returns to confront the modern world — the author's history is not a dis-

■ **Adopting a New Technology**—The business world is always looking for the next big thing. But when it comes to adopting a new technology, many companies are hesitant. The reason is simple: they don't know if it's worth the investment. That's why it's so important to do your homework before you decide to adopt a new technology. You need to know what the benefits are, what the costs are, and how long it will take to get the most out of it. Only then can you make a smart decision about whether or not to adopt a new technology.

■ **Chlorine**—Chlorine is a chemical element that is used in a variety of ways. It is a yellow-green gas at room temperature and is highly reactive. It is used in the production of many chemicals, including plastics, solvents, and disinfectants. It is also used in the treatment of drinking water to kill bacteria and other microorganisms.

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● WIN the book, the game and videos!

he has the history - he, and his high-ranking cousin, the great Duke of York, spent a lifetime contributing to the underground motion picture trade in New York. The right kind of money. The whole business is a conspiracy.

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[illegible]

The demand to control a nation's security is a responsibility that is shared by the nation and its citizens. It is a responsibility that is shared by the nation and its citizens.

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doing 'anything' to get out from under the 'burden' of a debt that is not theirs. The only way to get out from under the burden is to pay it. The only way to pay it is to get out from under the burden.

[illegible]

CONCLUSIONS

- 1. Which ethnic group played a key role in the development of the American West?
- 2. Which American group was instrumental in the development of the American West?
- 3. Which American group was instrumental in the development of the American West?
- 4. Which American group was instrumental in the development of the American West?



OPERATION NEPTUNE



The tranquil surface of the Pacific Ocean belies the battle of wits taking place in the world's last unexplored territory. A perfect hiding-place for a determined enemy, or is it? Your jet-bike and technologically advanced bathyscaphe should help, but there are still the enemy bases to destroy, lines of communication to be knocked out, and the natural predators of the deep just waiting for a tasty snack at the first sniff of blood! So check your oxygen supply, and dive, dive, dive...

Atari ST, PC, Amiga £84.95

CD464, Amstrad £14.95 (disk), £9.95 (tape)

INFOGRADES, MITRE HOUSE, ABBEY ROAD, ENFIELD, MIDDLESEX, EN1 2RQ.

INFOGRADES



CONFRONTATION: COIN-OP

The recent ATEI (Amusement Trades Exhibition International) at Olympia in London brought together manufacturers of one-arm bandits, pinball machines and video machines. This veritable heaven of electronic entertainment was experienced by Robin Hogg and all in this line of duty. It's enough to make you sick.



If your girlfriend had just been blown to pieces, you're in a hell-messed fix. They're game machines for that!

The award for the most surprising title was to be won on the Atari stand in the form of *Fairs*, a coin-op conversion of Microsoft's fantastically simple but addictive arcade game. This is a most unlikely game to convert but in play it works extremely well either as a single or dual play game. *Fairs* offers bright, original graphics to test the brain and proves as addictive as it is on the home computer. My only moan is that an expert could be an it for hours, but then again so could an expert on any game!

Atari were also showing the slush- 'em up *Spelunker* in its new look of the *Friday the 13th* theme Jason Vorhees is brought back to life to slomp through dungeons and slimy-encrusted hallways battling alien beings, worms and the like in the guided manner possible. Or any game. *Spelunker* is anything new but worth a look for the 'interesting' graphics.

Also on show was the Atariport Football of the 21st Century, *Cyballast*. Rather than have pure humans taking part, Atari have got together two teams of 21st Century robots to play one even rougher and tougher sport than is normally is. The twist in this version is that the ball is a miniature nuclear reactor and with the progression of time the ball heats up. If it heats doesn't score a touchdown or get out of it quick it explodes, turning the player into so much soot! Metal Cyberball is great if you like American Football, it's got over 100 offensive and defensive plays to choose from, safety robots, moves really really tricky and a four player demand for some really chaotic games!

The pride of the Atari stand though just had to be *Hard Drive*, a suspiciously familiar car racing game but one that will probably turn the whole racing theme upside down. Why? Well, the premise of *Hard Drive* is that oxygen controlled 3D graphics creates a much more realistic environment to the game than the more common layered graphics.



The exciting dual-play action game titled *Thunderbolt* featuring follow-up to *Operation Wolf*

Not exactly a game which goes like the clappers but the smooth movement is astonishing as the car races past mountains, bridges and other roadside features.

Another feature is the presence of a clutch and four gears. This is optional depending on the driver's skill but this long list of features means the driver is given far more flexible control of the vehicle than in *Dun Run* and its clones.

The ideas behind *Hard Drive* aren't new. The major part of the game involves negotiating stunt courses, avoiding other vehicles and racing against them. As instant replay features, graphics scales and even an option can spice up what is in starting a straight race game.

Electrostar, the masters of distributing top Japanese games were in force at the show. As well as a huge number of their existing games on show, they had Yoko

game gallery. The huge coin-op was *Operation Thunderbolt*, the follow-up to *Operation Wolf*.

Coasting double the firepower with four full guns bolted onto the cabinet. The damage with just one



got into pretty phenomenal but with two it's simply out of this world! Unsurprisingly, the new missions are even harder and mean double the strategy with new enemy weapons to blow away or be blown away by. Great fun following in the excellent tradition of Operation Thunderbolt and boosting the game's appeal even further with the team's dual play option. Expect this to be at the top of the 1989 video software charts, whoever gets the license. It's a 99% certainty it'll be Doan.

Also on the Electronic stand was Capcom's *Strider* (originally named *Patron*). An elegant standard of physical timing and clarity, it is the minimum required if you want to be Strider. In this gem which is soon to undergo the US Gold conversion, greatness goes hand in hand with the most manoeuvrable future warrior yet seen - Bay does this better myself. From what I saw the game was devoid of much plot but involves the athletic Strider leaping from platform to platform, sliding up and down ramps, unleashing his laser sword to take on aliens and collecting power-up capsules in a run of the mill way.

Using new Capcom technology the result is graphically stunning. Strider moves around a suitably dark, future background high aboveground over strange, dark, twisting forms, from platform to platform, sliding ramps and sliding down others. Strider can unleash a pretty impressive laser sword to hack at the aliens. Not really a shoot-'em-up but this is certainly one of the best platform games.

Shining stands alone with Operation Thunderbolt and the other Tatsuo machines was Capcom's superb *Ghost'n Goblins* (coming soon from the US Gold states). Presented in TQ4614 the final game is absolutely brilliant. Gameplay is traditionally Ghost'n Goblins and hence can't fail in creating superb play-

FACE THE SOVIET CHALLENGE

TETRIIS

At last...a unique game there to bring in new players



Tetris is so totally new, so totally there is positively nothing else out there like it. It's a puzzle to master, being a labyrinth of numbers. The pieces that fall in front of you are horizontal lines. The lines that fall in front of you are it's so new, but somehow the challenge never ends.

Break the 'shoot-em-up, punch-em-out' blaze with Tetris.

Available on all major video game systems.

Available on all major video game systems. Find out more by looking at the back of this ad.

The official Tetris game for the Atari 2600, Intellivision, and the Commodore 64.



Well, doesn't Strider move in a hell of a snappy way. Move on, the good guy always wins.

ility. And graphically Capcom gives the buzz with high on all other platform games for maybe Strider.

The atmosphere is dark and forbidding with all types of beasts of the night and magic creatures to defeat. Some truly beautiful

include Arthur turning into an old man when rescued by a soul, the graphically the cut use of scenery, Guts turning into a warrior with a sword and a sword. Go out and play this game now! It's the most playable game I've encountered yet, full of wonderful

effects. Graphically this is one of Capcom's best yet and just fantastic. Enough said.

While in the leading, striking, jumping mode, Tetris has Shadow Strider waiting to make a UK appearance. Knocking off with the Shadow Strider ending the USA it's been with the shiny streets of America for things action

of the violent kind.

Shadow Striders is an extension of the early cap monster arts theme and so wins no prizes for originality. The gameplay isn't startlingly new either but the winner has some highly original moves providing a new approach to the old theme. Typical moves centre around



The sequel of the sequel of the Commando sequel - and not a very good one at that.

connecting foot with face and using swords, shurikens and the like. As well as this the warrior can shoot off with some very impressive blasters! Inevitably the TV action's style moves. Like Double Dragon, objects around the playing area can be used to great effect against the evil gangs, major villains and very big bad guy!

Picking up a thug, throwing him into a phone box and then sending him post to kick him into the middle of next week is immensely entertaining. Dodging cars on the highway is another hazardous but fun occupation.

The graphics are superb, conveying immense detail within the backgrounds and characters themselves. This is at least in a very timely way, because play screen, a great front end and



You'll either go faster than *Dragon* or your journey. Porsche is gonna go *BOOM!* instead of *BOOM!*



The athletic Wonder is confronted by a laser-splitting pool. Can his hi-tech blade give him the edge he needs?

superb presentation (which the manual also made to do what I mean). With this product, Techno looks set for stardom - if this isn't converted to the home computers within the year I'll eat my PCB.

Thank you for your co-operation - the immortal words spoken by members of the future RobotCop, the latest hit from Blake Reed. At the start human cop Murphy is blown to smithereens by robots. Reconstructed by technicians to become the all-waiting, all-fighting, all-attacking cyborg RobotCop is out to clean up Old Detroit.

Initially horizontally scrolling with the odd vertically scrolling stage, RobotCop takes on badniks with his fists and one mean gun (very neatly in camera). The first stage is set in an Old Detroit street with the badniks appearing at windows, riding bikes, holding hostages and performing other criminal acts. At the end of the level is an ED-209 who's out to stop you, and performing with unfailing efficiency this time.

As RobotCop progresses through level after level, he gets to

wander through the cinematic locations following the bare threat of the film. Following target practice in a 3D section, the initial map moves into the drug factory, CCP headquarters (with military ED-209's to make) and most of the other cinematic locations. Cinematically very good, RobotCop is very tough, quite rightly there's only one life left the rate with which things go. Lost is at times very severe.

The later levels do tend to get negatively similar and the ending is a bit out (no gun intended) but RobotCop shows Just Data Reed can still produce playable games with great sound and graphics. Watch the film, play the computer game and treat yourself to a go on the coin-op.

Surprisingly it took until late last year before anyone got round to converting *Superman* into a coin-op here. *Taite* have had a go and brought out a great game but breaking away from convention slightly in having two *Supermen*.

Once again a super villain has designs on *Wonder Boy*, in this case the alien Emperor Zax is

sending hordes of his minions closer to cities around the US and *Superman* (or more) are out to stop his plans. With a mighty kick, controllable power punches, sword blast and heat vision lasers *Superman* is one tough cover-of-the-day.

The action starts in New York as *Superman* runs and flies through the horizontally scrolling streets.

Wonder Boy's action is the follow-up to the classic *Superman* coin-op, thanks to *Robot*



Zax's hordes line up to be kicked around, barriers need to be punched and other obstacles for the man of steel's way. With a run, up and away *Superman* then aims skywards to shoot down incoming asteroids, the odd helicopter gunner and one of Zax's and best attack spacecraft.

Made up of five levels, *Superman* goes into San Francisco, Las Vegas, Washington D.C. and finally Zax who's musing along in his spacecraft. The creators of *Superman* will be pleased to see an enjoyable, action-packed game such as this but if you're into originality you may be disappointed.

On the *Dragon* stand was *Wonder Boy* - featuring *Wonder Boy* - which is great if you like *Super* items. *Wonder Boy* style action, great if you like *Wonder Boy*, but not so great if you want some serious action. A game involving shooting badniks, robots, dragons, alien units, robots, crocodiles and other unusual foes can't be serious but this is where *Wonder Boy* appeals undoubtedly less. Superbly suited to look at *Wonder Boy* has *Wonder Boy* and gathered *Papilo* (go through 14 rounds in an dog-like attempt to imitate the ventures of a past hero. This is the third in the series and it's even more playable than the others.

As *Double Dragon* into the computer, to *Double Dragon 2* -

The Fleming hits the arcade. Forget going to rescue your loved one in this game, which is filled with bullets by the big boys. Looks like it's time for vengeance in Pazzo's sequel to the evergreen beat-'em-up, Double Dragon. I will doubtless pull in the crowds, but the gameplay is clearly unoriginal.

JUST SAY NO TO DRUGS — That's the message shoved down your throat all the way through Williams' superbly made-up video game. Along with Axel and the then low-key Pazzo, Williams were the company of yesterday for arcade amusement, with classic titles like Defender, Ruckus, Pole Position and Star Wars to their name. Williams have been recently making all of life. Hopefully ARPG will change all that as it not only is a first-class 'em-up, but it also incorporates digitized voiceover motion for the battles. The movement of the second level battles is extremely good and indicates the way to go in graphic animation. You could say Pole Position motion injects life into the game (sarcasm).

One or two narcotics agents (having more futuristic ideas) lead out of their red Persimmon in paid to suspects dabbling in drugs. Working through each level, the suspects are many but the good guys have some pretty impressive firepower to hand. As well as machine guns, rocket bombs can be unleashed for large scale destruction. You'll need them as the heavy hitters (a river of the one suspect) come out in great number. The object of each level is to either arrest the prime suspects or kill them — killing them is easier but you don't get the points (although you can get the hyperbolic point on the second level). Drugs, money and extra weapons can be picked up for bonus points and firepower.

The agents move onto a subway platform, into a warehouse (look out for the stage), onto a bridge and more facing not only suspects but criminals in their helicopters (frustrated by a superbly sound of the 'copper' starting up and then taking off to attack the agents).

I cannot emphasize enough about the coin-op. Gameplay is as original as they come (i.e. not very) but the invisibility over-the-top violence along with a very clever animation technique makes this game with a social message a winner.

A convention from Friday the 13th, Jason's now a monster-slaying hero in *Boulder House* — eat your heart out *Blues Masher* (J.D.)



If you thought you'd seen the last of the last Warriors/Military Road! Quanta Wars but then think again. **RAK** are dragging the last few drops of the out of a barrel but still profitable game idea and attempting to compete with the bigger boys with Axel & the Pazzo. With one or two soldiers laying, sliding and punching the enemy, it fails to inspire and just look like they're pulled the last Warriors theme way too far this time.



Cyber-Verse machine, RoboVirus versus G3-JR. RoboVirus versus G3-JR...



A glimpse of the future was offered by *Real Time* but *Real Time* was the one to show what could really be done with polygon graphics. This was 3D Real Time 3D Simulation System known as *Custom 3D* looked incredible as it showed off the new game winning idea on the Custom 3D system. Using Polygon shapes as building blocks the graphics showcased the *Real Time* 3D game with a whole new dimension to our vision — the first person perspective with no compromise.

What the polygons look in colour rather than shapes they make up for in motion. To all effects and purposes you and your car are there as you race around the track, through food-of-tunnels, into the pits and up into steep climbs (leaving the pit of gravity as you do so). Funny game the wrong way around the course? *Real Time* shows you it is just that track out for more details of this extraordinary coin-op soon!

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ROBIN HOGG'S PLAYING TIPS

■ YOUR GUIDE TO BETTER GAMING ■

Last month we left you stranded at the end of a level in *Last Ninja II*. Assuming you haven't progressed any further (perhaps mean you haven't), here is the rest of the solution.

■ LAST NINJA II

■ LEVEL 5 - THE OFFICE

Leave the first screen and go through the blue door and touch the computer in the office. The computer will give you a number which you should take down. Go back out and follow the path down and around in a prison with two doors on it. Go through the lights and walk over to the desk near the pictures. Stand at the bottom and use the "pick up" movement to touch the button on the table, thus opening a secret door. Climb the ladder in the next screen to reach the second floor of the office, then go out through the door. Go through a room with a fan in it, stand close to the wall and face backwards. Keep repeating the steps backwards until you reach

the back wall then go to the gate and use "pick up" again to open it. Go out onto the ledge. Follow the ledge around and go up the ladder. Kill the robot that you see then put away all your weapons. When you get to the last screen of this level you will see Kunitake making his escape in a helicopter. Stand at the top right hand corner of the screen and when the helicopter leaves, somersault off the building and onto its landing skid. The helicopter will now carry you to the next level.

■ LEVEL 6 - THE MARCH

This level starts with you still hanging onto the helicopter, so to get off without killing yourself, pull down on the joystick when it flaps past the turret and you should drop down safely. Somersault forward, landing in line with the turret on the left, then somersault again to land on it. Now gently nudge left off the turret and walk along the grey strip and you reach the window. Face the window and somersault again to land inside the corridor. Walk down the corridor into the next room, go through the big door and collect the paper so that you can go down in the dump



water. Turn off the plant then walk behind the plant where you should find an entrance. Push the switches on the wall to switch on the lights in the room which is on the wall screen. Get yourself through the maze (this is pretty easy) and you should find a secret angle. Redirect the steam by touching the right hand switch on the boiler and you can walk through the door to the next level.

■ LEVEL 7 - THE FINAL BATTLE

Kill the guard in the first screen.

Then walk through to the room with the pentacle on the floor. Go over to the tapestry on the wall and lift it up to reveal a safe. Unlock the safe with the combination from the computer in the office and take out the key. Then turn the key. Kunitake will now enter the room and you've got to kill him so that he falls somewhere inside the pentacle. Before he approaches, light the candles on the points of the star and put the key back in the safe to finish the game.

■ ELITE

(Amiga)

■ When asked for the pass word in

the manual type (SARA, that type in the correct word. When the game starts, press the "" key on the numeric keyboard to enter the hacker screen. Change one or

more of the following. When finished press the Escape key to return to the game. Thanks to Andrew Molloy of Tyneside. Change number from the first to

the second.

22 to 23	Large cargo key
24 to 25	ECM system
32 to 33	Working computer
35 to 36	Beam laser
38 to 39	Autosensor
40 to 41	Forceps capsule
42 to 43	ECM jammer
45 to 46	Energy bomb
48 to 49	Cloaking device
54 to 55	Genetic hypervisor
58 to 59	Military lasers
64 to 65	Stimulators
68 to 69	Food
70 to 71	Toxins
74 to 75	Radioactive
78 to 79	Sensors
82 to 83	Liquid wastes
84 to 85	Narcotics
88 to 89	Computers
90 to 91	Machinery
92 to 93	Alloys
94 to 95	Firearms
98 to 99	Fuels
100 to 101	Minerals
102 to 103	Gold
104 to 105	Plutonium
108 to 109	Chem wastes
110 to 111	Alien items
112 to 113	Unhappy refugees
114 to 115	Thangrid documents



■ OPERATION THUNDERBOLT

(Arcade)

Stand new tips for a brand new combat!

- Aside from general survival go for the laser light as soon as you see it. With that little red spot on screen you can aim with total accuracy (very useful for the terrorist sniper target).
- Go for the ground targets more than the aircraft and helicopters.

the MIG-29's are too fast to cause much damage and the helicopters take their time to turn round and fire. Bombers, tanks and the rest are a lot quicker and much more dangerous!

- Get another player in on the action. With double the players you get double the firepower and double the destruction!



■ TRANSBOT

(Cheat)

- The quickest and easiest way to destroy the evil of game elements is to use the power A for normal fire, or the power B for beam.

■ THUNDERBLADE

(Cheat)

- Towards the end of level fortress, guide your helicopter to the left or right (go corners and without having to risk a life to

destroy the final gun turret, the fortress immediately goes up in the air and smokes.



■ HEROES OF THE LANCE

(BT)

- Use the FREQ TRANS (call often), as falling rocks tend to severely damage your team.

■ WANTED

(BT-Average)

- Don't go for power-up barrels if they're in the bottom half of the screen - the automatic scrolling instantly traps you against a wallface and the badies have no quibbles about firing you with lead when you're in the position.

- Remember the fixed layout of power-ups, collecting skulls decreases the number of items you have to watch where you walk.

- Immediately kill any cowboys that appear just above your position, they're deadly at such close range and have a nasty habit of forcing you into the firing of bullets fired by others.



■ THE NINJA

(Cheat)

- When fighting walk backwards and walk from side to side while pressing the button Z. This is, particularly useful when you encounter the pack of wolves.

■ DOUBLE DRAGON

(BT-Average)

- When you reach your enemy go up to him/her, you then a forward, and then quickly run behind them and give them another kick, doing this until the enemy dies. Thanks to Gary Shaw of Crashmag for the following.



■ BOMBUZAL

(Amiga)

In each case the code word is followed by the corresponding level.

BOGG 6
BATT 16
LBA 24
Sme 28
CAVE 32
BOG 36
BOG 40
BMO 44
LEAD 48
TAP 52
WED 56

WAGE 60
RNG 64
PLL 68
GFL 72
SPOT 76
GOLD 80
RAJ 84
CPAL 88
LOCK 92
SOPG 96
SAFE 100
RSE 104
WOM 108
LWOP 112
TREE 120

■ FOOTBALL DIRECTOR 2

(ST)

■ When you first start the game, accept only short contracts (up to about 25 weeks). This allows you to spend lots of money on players without avoiding getting sacked for overspending.

■ When offered a new contract, wait if the team is doing well.

■ In the third and fourth divisions, use your youth team to develop players.

■ In the first and second divisions, use your youth team to develop players to sell and use the money

to buy any player from skill 6 and upwards.

■ Never buy players over a skill 7 - you can usually raise their level to 8 by using skills training.

■ When giving extra training try to have at least two spare players for each position as injuries are quite common during training.

■ If you take out a mortgage, make sure the players you need are on offer that week - the director has already paid off a large part of your current account when



Thanks to Bob Manners for the complete list of code words for Bombuzal on the Amiga.

Amiga.com of Newcastle is an avid ST games player. Here are a couple of tips for it.

■ AFTER BURNER

(Sega)

■ When confronted by the Flying Fortress after stage 6, just quit your F-16 to the top left hand side of the screen and then after a few seconds you immediately reappear on stage 7. Do the same for later confrontations.

■ OUT RUN

(Sega)

■ The quickest and easiest route is one of the freaking lines is to keep going right. You get a faster time and more points.

■ KINGS VALLEY 2

(MSX)

TRYAGAIN
FESTIVAL
MINAHAPL (MUSIC STAGE)
DDAHAPCP (LAST ROUND)

Thanks to Harry Robertson of Holland for these passwords.

■ KUNG-FU KID

(Sega)

■ Kick the wall towards the top of the highest floor on the right on level 5 to get a jet of water to send off enemy fireballs and also turn your hair pink.

■ On the fifth level go to the wall on the left of the second highest floor, then quickly kick the wall repeatedly to get a bun which turns up your energy bar.



■ THE MUNSTERS

(Amiga)

■ From the start go right to the end and wait in the middle of the room, then shoot the ghosts until you fill the spell jar to the top, then go down the stairs and collect the object to the left, then shoot the ghost to the right.

■ Go right to the graveyard and collect the cross, go left and up the stairs and keep going until you come to the big light of stars.

■ Go down, wait for a certain ghost because if it haunts you he reduces the spells very quickly. Quickly go left, shoot the three

ghosts, collect the bottle, go right two screens to collect the key.

■ Go left and up the stairs, go far right and down the stairs, go left, kill the ghost, go quickly down the stairs and kill the three ghosts.

■ Go left and get the object, go right to where Herman and Gertrude are, collect the object, go left up the stairs and wait in the middle of the room for the vampire to kill him. You'll have to find out how much spell power you'll need to kill the vampire.



LED STORM

[illegible]

■ **Frilly clothes really, have** popped on the straight but loose where the neckline and use that just past the gaps. Or for the fashion stars to give you temporary availability and antique bonds. Or just use, also close before the

end of the second canyon and turned left or right to avoid the fire and then returned still later. Later four or a dozen, back to the rest as straight and narrow (old road) and went the Eastern Island (Islands). The first out of the way past the city.



TOP GUN

1000

■ If any events, classes are coming up from directly behind, just stay still and watch as they fly directly into your waiting, tight, open arms.

- Any jets that back onto you can be shaken off with first a bank to the left/right as far as possible followed by a smoothly executed and sustained bank in the opposite direction.

■ **After landing** immediately correct any deviations in height or airspeed. Landing leaves no room for mistakes. You can't crash into the ground so don't worry about your altitude.

■ If you see a missile coming towards you, try to shoot it down. Chugging it is difficult and often the missile can wash your tank. With constant missiles you're in it deep.

not try to defend herself in court or to sue anyone and would like the rest.

- For level one, use the board instead. They're redundant and they do the job as well as dry effort.

■ So this is a training session, just keeping busy at anything the time.

1000

■ **Team up with the Wolf** Teamwork is the key to success, and the Wolf team will be the one to lead you to the finish line. The Wolf team will be the one to lead you to the finish line. The Wolf team will be the one to lead you to the finish line.



SORCERY

100

Sheldon Linahan of Madison County Clerk has sent a check for the RT version.

■ Type in **GAS MGR. WHEELER**
WANTS CHEAT (including
 space) and your complete address
 for delivery.

■ THE PRESIDENT IS MISSING

100

■ This isn't really a hint, more a bit of technomagic: whenever trying to decipher the five coded transmissions the best way to go about it is to record them onto a tape and, if you can, slow down the tape speed. This allows you to work out what are dots, dashes and word breaks. By using an equalizer you can also get rid of some of the background noise which distracts your concentration.

MANHATTAN DEALERS

[illegible]

- On the screen in which four people drive trucks and spar with you, just position your man in between the trucks in the small

play in the middle of the court. Power was not scored the jungle run out of things to throw at you. You also cannot get hit.

■ NEMESIS 3

- Above all else, learn the patterns and keep on the offensive and don't let anything through. Mobile and fixed-gun emplacements tend to channel you into a corridor of death if you don't take them out quickly.

■ On the weapons selection screen, go to the bottom left view star lighter — the capsules inside it offers different formations of items with one click. Use for the benefit to prearrange but total cover and also the fixed multiples. The status capsules are used for

clearing mass sections of big growth but not much good for conservation.

■ **When up against mother-aliens** who brow beat masses of alien and isolate a Pippin laser is your best bet. (Don't try and collect the Fireblaster special weapon - it's completely useless against long range targets.)

■ On the Island, hole level try and get all speed ups, you'll need them all to avoid getting warped back to the start of the level.

SHINOBI

1000

- On the title screen push the controller diagonally down and right until pressing a button (and you'll be able to select which save games you want to load).

That's it for March. Gary Shaw scoops the EAO software category this month, and if you want to do the same send your gaming EOs to the usual address: **THE CLAREN MAGNINE, PO BOX 10, Ludlow, Shropshire, SY8 1DN.** Please mark your envelope **PLAYING TIME** and include a list of the software of your choice.

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RADAR OF THE LOST ARGONAUTS

How do you simulate a plane that's top-secret? In this second instalment of the TGM/Argonaut diary, programmer Pete Wornes explains how the X team managed to recreate realistic radar.



Christmas, 1988, was fast approaching and hardware problems plagued us, but the X development schedule forced us to plough ahead. X, as we were coming to realise, was going to be the most complex game we'd ever seen! There were major new routines to write and none of them looked like being easy.

I was to spend a few months working on routines for the radar and the pilot's head-up display (HUD), as well as some subroutines for the complex gameplay. The developer started off with what we thought would be easiest: the radar and its display screens.

As it turned out, the HUD was intimately tied in rather too intimately with the workings of the radar, so I ended up working on both routines at the same time. The task was to simulate a modern fighter radar, but we didn't really know where to start. Where could we gather the information on what modern radars like — and what does it really do?

We tickered the best place to start was the bookshelves. After all, there must be hundreds of books written about jet fighters and their radars. ... Surely all we had to do was drop by Poyser & Dillan's in Central London and they'd point us at tens of books. ...

Alas, not so. Though there are countless thousand books written about jet fighters, almost every one had as much technobabble as a Ladybird book on porcupine to Ladybird books, of course! There were, however, plenty of colour photos of aircraft

and walls of text about the armaments and even the power of their magnetically jet-actuated, but these books had precious little to say about how weapons actually worked, or how radar computers on the ground calculate threat evaluations of potential targets, or how the pilot interacts with the radar displays and controls.

It was almost as if there were conspiracy against us. Did we lack even mention (HUD) or radar intelligence? Was all this stuff really classified, or was it just hiding in obscure books like *The 101 Things To Do With Your P-51 Mustang* and *Radar Attack Computer*? I remembered reading about some Soviet fighters whose radars were allegedly designed from stolen American technology. But where were the silly-gilly?

No doubt it must be some sinister reason that books on radar immediately mysteriously go missing. I mean, this Johnny who wrote a pop-up book of Soviet MIG 29 fighters' radar? He really seems to know the radar works when all he wants to do is to out the prices and glue them together into a nice little module for his book. Best, compete with Tom Cruise in an upstart Soviet F-14 going one-fingered salute! ...

We ended up buying an unimpressive number of books on the subject in the vain hope that eventually one might provide enough information to begin writing this X radar routines. A lot of searching later, we finally investigated a place where we needed, mostly from a couple of particularly fine books in the Aviation Fact File series.

We realised it was possible to simulate the workings of the radar without having to know precisely how the real McCoy's software worked. And anyway, if we ever got a closer look at the real thing you can bet we'd soon be guests of the US Department of Defense. ...

A choice at last

By far the best data we possessed on radar was for the Hughes AN/APG-68 Conquest Pulse Doppler Radar, as fitted to the Northrop F/A-18 Hornet, which is the US Navy's replacement for both the F-4 Phantom and A-7 Corsair. This was mighty fortunate for two reasons: the Hornet is a remarkably capable fighter, with versatile roles.

► Creating the pilot's radar: X programmer Pete Wornes



NEW READERS START HERE

The story of it is the story of a new kind of simulation — a sophisticated form of it set this to be fiction, who shall prove undisturbed by radar will be the same. But as this book is made story steep, the simulator is like multiple it will make a radar function more sophisticated than any amount can.

Joe Bar and his team of Argonaut Software, who owned 10% in 1988, for him about making class. Stephen L. on writing the program contained 7% to Thomas Arts, who hope to release later the year.

The first part of their story appeared in TAMES, more will follow from different members of the team.

See you on ...

And of course it would be a fun to simulate! Not only does the Hughes AN/APG-68 radar offer powerful features, the cockpit interface is one of the most computerised in any fighter to date, with a glittering array of multi-function graphic displays and powerful radar software.

As work started on coding the radar, we realised that the routines involved more than just a load of summing objects. The Hughes radar has the popular ability to seek out enemies, and can even carry out threat evaluations on multiple targets. It can keep files on the ten most threatening targets while presenting the pilot with the top eight — purely for educational purposes, of course, and like he'd want to shoot them down or anything. ...

It has fairly modest to detect objects against a background of roughness. It can even map out terrain, guide the pilot through obstacles in poor visibility, discern the number of enemy in close-packed formations of great distances and then think of everything, least the pilot through a cleverly designed for giving continual steering information and

TURNAROUND TIME

Ticks of the 3-D tickle

Remember the old plotting of a 3-D object about any axis. Now we have 3-D, you can look at our turnarounds from any 3-D angle.

All our rotations are done at moving time—when an object wants to turn we use a fixed formula in the "turnbook," a chunk of data that represents where that object is looking from. (It's called the "turnbook" for your technical reason.)

The other two books (one 3-D cosine, 3-D ballistics, one 3-D graphics math), mostly the early 3-D rotation, used mathematical tables. Every time an object wanted to turn we would manually turn each coordinate of its table and, unfortunately, they wanted to know it. They got mad at the coordinate and then them.

They wanted to view objects. Sorting objects when you have large numbers of things moving and rotating every single frame.

The 3-D illusion

Problems in the art of converting a 3-D point (with x, y, and z coordinates) into a 2-D coordinate for viewing on a flat screen.

To display a 3-D view on the screen, all the objects within view have to be sorted, projected, and finally rendered from front-to-back, top-to-bottom. The math and logic to perform these tasks at 1/60th of a second at 100,000 calculations and divisions for every single pixel at every 3-D start that's visible, and it's in the graphics hardware.

What's difficult is making it go fast and optimizing it so it takes as little time as possible.

We've spent a long time getting our 3-D and viewing things using mathematics. It's not like the fast turn-around tables. These projects, however, which don't have as many moving parts for every game, allow us to spend a lot of time writing a fast, powerful calculator like C.

weapon-launch cues. Altogether, there are 14 different modes, all of which we have to simulate.

We began writing the main structure of these simulation routines, but already we were planning how to make the other vital water-associated features, the HUD. It would be easier to integrate the two routines if they were written concurrently.

The code for learning nearby objects wasn't too hard to write; the really tough work was for the threat evaluations. These all seemed much easier on paper, made up of phrases such as "and the targets in the center of how soon each will be in range of the aircraft." That's easy for someone to tell you. It's harder to learn being capable enough to understand "is your aircraft" or "hazards that pose", but putting it into code isn't quite so simple.

For a microcomputer to do these kind of huge calculations on a lot of moving targets is a task demanding on processor time. The code must be as efficient as possible to get them done

quickly, or the time spent on threat evaluations will slow down the graphics.

After all, other people on the team were working very hard to make the graphics faster than ever; who was I to destroy all their hard work by telling the naive code to slow the speed of the game?

Sorting enemies out

One of the most significant pieces of code I tackled was the sort routine, which would put all the threats into a priority list every time a second, since it had been decided to copy the Hughes APQ-88 radar as closely as we dared, this routine had to sort the targets into the "ten most wanted" just like the real thing.

After discussing the problem, we settled on a sort routine that only sorts the current list of ten targets by inserting new ones as they develop—in, as the pilot/player has along and encounters different threats. Since the number of targets would never be over (say) 50, this would work quite nicely.

We started writing the sort routine with the aim of making it as fast as humanly (inaccuracy?) possible. The increasingly complicated code we finished in three or four days, but I took two more days to debug, we were quite pleased, because debugging these really intricate routines has been known to take weeks.

The sort routine was placed into the matrix in the radar mode that we'd reserved for it, and we could finally finish our thoughts fully to the HUD. But that's another story.

Meanwhile, as all this was being done, I must have gotten the graphics even faster, and implementing 32-bit math accuracy. This allows far-away objects to be visible, showing details that not many games have shown

before: the cities, long roads, runways, airports etc.

The code was designed to allow arbitrary scalings of objects up to a few thousand miles in diameter. (Since you can only see a few hundred miles ahead [say] this should allow more flexibility in the scenery we depict, as well as stopping that annoying problem of large objects becoming "invisible" before you could see them in real life.)

Yes, in a 10-bit world you might want a planet very quickly. Assuming our minimum units were miles, the maximum diameter of a planet would be only 64 kilometers (40 miles) even at scaled size. This explains why you could only a diameter landscape in many scenarios, flying at 400 meters per second frame for in real time 2000 feet per second.

In *Blaster II* we improved our routine, using 32-bit coordinates to increase the size of our 3-D world, but we kept all the 3-D calculations to a local 16-bit for performance purposes (back then, we thought 32-bit 3-D calculations would be too slow when the processor is only 16 bits, so you would be flying around a larger planet, but you could only see up to 64,000 miles of you at any one time).

This suited us fine at the time. But come 3, we needed the flexibility to see large distances in any direction. Mountains ought to be visible a few hundred km away, and cities and roads shouldn't suddenly appear large—they should fade in from the distance.

So the 32-bit math was improved to allow rotation and produce the technical term for how the 3-D-view is constructed: see how headed? Turn-around Time, and at last we had the capability for large objects and distant objects.



Dial A Prize!

Phone-in fun with TGM!

Tazzzz! Klink, klick, winner, brr brr CUCK! Yes, the TGM Hotline is in operation again - pick up your phone and dial the number and listen to a fast-packed two minutes of information detailing release dates for the top games for February and March; and this month we're offering you the chance to win one of 50 copies of *Wec Le Mans*!

Every month we'll be adding more and more to this unique service, coming soon we'll have a Billboard line with hot news, delivered direct to you, of course you'll be able to read the full story in the following issue of TGM.

Information - On-line!



Printed here is the number which connects you direct to the TGM Hotline service. And we've got 160 lines, open 24-hours a day, so don't worry about the service being engaged. Ring this number and listen for just two minutes as we tell you what games are coming out, and when!

For the information we're giving the Hotline is cheap. The phone call will cost you 25p per minute when you call during off-peak time (Mon-Fri 8pm - 8am, Saturdays, Sundays and Bank Holidays) or 38p per minute during standard and peak times (8am - 8pm Mon-Fri). The TGM Hotline is produced by TGM Magazines Ltd in conjunction with Chatterbox Ltd.

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HOW TO ENTER

Dial the number (read, read) and listen carefully to the three questions. Fill in your answers in the boxes provided and complete the tie-breaking sentence given to you over the phone.

When you have complete the questions, write your name and address, and your computer format and send it to: WEC LE MANS HOTLINE COMP TGM, PO Box 99, Ludlow, Shropshire SY8 1QB. All entries to reach us by March 15 1990 and, as always, follow the competition rules or you'll be left in the pit!

1

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3

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When the lights go up
the show goes on.

The cover of MOVIE magazine features a close-up portrait of River Phoenix. The word "MOVIE" is printed in large, bold, yellow letters at the top. Below it, "MOVIE THE VIDEO MAGAZINE" is written in smaller white letters. The main headline "RIVER PHOENIX" is in large white letters, followed by the sub-headline "Growing up ain't easy" in smaller white text. Below that, "STALLONE" is in large white letters, followed by "Has Rambo been rumbled?" in smaller white text. Then "CAGNEY" is in large white letters, followed by "is fine and dandy" in smaller white text. The bottom section has the headline "WIN YOUR OWN MASQUERADE IN BOSTON" in large white letters, followed by "Plus a long weekend by plane, train and automobile..." in smaller white text. At the very bottom, it says "\$1.99 Issue Five February 1989" and "A PUBLICATION OF PUBLISHERS" in small white letters.

MOVIE
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THE
VIDEO
MAGAZINE

**RIVER
PHOENIX**
Growing up ain't easy

STALLONE
Has Rambo
been rumbled?

CAGNEY
is fine and dandy

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MOVIE is the great monthly for film and video entertainment. Issue Five is available now. \$4 feature-packed pages on who's who and what's what on the screen including River Phoenix, Sylvester Stallone, James Cagney and great comparisons. Plus a 16-page Stanley Kubrick supplement, valued in a 12-part series to collect. MOVIE - The Video Magazine gives you the complete picture. \$1.99 from all good newsagents - or send \$1.95 to Newsfield Ltd, PO Box 20, Luton, Bedfordshire LU1 1JH for a complete copy.

Where worlds collide

GURPS

(GENERIC UNIVERSAL ROLE-PLAYING SYSTEM)

Softbook Books

Steve Jackson Games, \$19.95

A bleak landscape dotted with peasants, each struggling to make a living from the barren land. A rough road leads, past them, to the horizon, losing itself in the foothills of a mountain range which stretches far into the clouds. A ragged bunch of adventures, armour clanking, fledge their weary way toward the farm in the hope of finding a place to spend the night. Suddenly, as if from nowhere, a spaceship emits a roar of retro-fire and plunges into the misty-covered field. A moment passes, steam billowing from where the hull of the ship touches the damp soil.

Two RPG games have just collided, finally, all role-playing games are designed with a particular setting for their adventures. Every in mind, often a very specific one such as RuneQuest's desolate or Thudar 2000's highly detailed future earth. There are few more advantages to purchasing a game that first design led to a particular world of adventure; the players and referees can be provided with a great supply of background detail to breathe setting into life, and the rules of the RPG will automatically suit the skills, weapons, technology, magic and so on of the chosen environment. But there are problems too with referee time to know (and construct) a new set of rules for each different campaign they wish to play, and — as suggested in my magazine-dog introduction — it's always crucial to transfer characters and ideas from one game to another.

GURPS is an attempt to obtain the best of both worlds by providing

a system of rules with detailed suggestions to flesh out a whole range of settings from the First Prince of the future conquest of space to horror in 1880 London.

GURPS comes from US company Steve Jackson Games, also known for the famous Illuminati role game. For £19.95 you receive a huge rulebook, very clearly set out with a sprinkling of black-and-white illustrations, and that all too often absent essential of any RPG rulebook — a comprehensive index! The presentation really is impressively user-friendly, with everything set out under the three parts of the rulebook being in colour or smaller print in the side margins, making it much easier to pick out the basics, yet leaving the optional rules and additional examples together with the sections they extend or refer to.

The rules include lists of skills available to characters covering almost any setting, including none but with anything from a club to a

lightning, steering drive maintenance, shipbuilding, sailing, nuclear physics and pretty well anything else you can think of. The combat system, too, is impressively comprehensive — a character in a fight has a range of attacking and defending weapons available, such as at-once attack, firing to deliver an opponent and dodging a blow with a weapon. Also handy for new players are two introductory adventures, one for solo play, the other a scenario for 2-5 players.

As a generic system, the GURPS basic rulebook doesn't include any background material on magic, magic and however it's used, or the design of game worlds, covering both features as differences in technology and economics, and lists of weapons and equipment for modern and futuristic worlds. For more detail there are many *Worldbooks* available, costing about £5.95. GURPS Advice, for instance, gives

advice, for whether such magical games come from the GURPS worldviews, other role-playing games, novels or films or even the players' own imagination is unrestricted — the GURPS rules can handle it. The system is simple to learn and play, yet flexible and detailed enough for the average gamer. If the idea of a generic system appeals, or you want a straightforward set of rules with which to run adventures in a setting of your own making, GURPS is worth a look.

Here's a quick look at Cities, the latest of several softbooks for the new GURPS. This 66 page booklet is bursting with examples of all forms, beggars, prostitutes, slaves, spies, thieves, magicians, bureaucrats, gypsies and even gods. Suitable for use in any fantasy setting, the booklet will be of enormous help for any games master wanting to run adventures in an urban setting. As well as extensive tables of background information players might find info-

GURPS HORROR



new skills, magic, monsters, equipment lists and so on for some intriguing adventures in Victorian England, post-apocalyptic America or the present day.

All in all, GURPS achieves its objective of providing a system that can cope with just about any adventures you care to imagine. Points well, inevitably referees will need more background material than is provided in the basic set, but any but the most superficial ad-

ventures from a potentially deadly turn-in with an assassin to a deadly meeting with discarded dark water, there are pages of advice for developing and fleshing out your town or city and some very useful tables that allow characters to pass their time in profitable employment during adventures. A useful product for any fantasy system, but so with other products in the series a little pricey at £7.95.

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TQM21 May 88

South Atlantic Ring - Britain's first home-fighting video publication increases the impact of its new video technology on its readers and sponsors with a new 16-page 1988 South Atlantic Ring. The Ring will be the first of its kind to be published in 1988 and will be the first to be published in 1988.

TQM27 June 88

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INFORMATION DESK

Music questions make the biggest noise in this month's Information Desk, as our Back Bytes staff answer your enquiries

Desperately seeking synth links

I own an Amiga and a Yamaha PS1400 synthesizer and wish to link them together. Is it possible with music on my Amiga and play it back on my synthesizer? Could you recommend a peripheral which would allow me to do this?

Roger Martin, Gibraltar

MIDI—Musical Instrument Digital Interface—is what you need. MIDI is not a particular product, but a standard which allows several musical instruments to be linked together or to a computer so that everything is controlled from one source.

Dave's Multimeter is a standard MIDI interface with which one box goes, one through port and three out ports—more than enough for most musicians. Of course, you'll also need software to get the most use out of your MIDI link-up. Which TQM for a review of Amiga music programs in the next few months. Multimeter costs £24.99. Dave's

Electronics are at Fusion Industrial Estate, Cowes Road, Bournemouth, Dorset BH10 2JN (0702) 744707.

I own a C64 and would like to link it up to a synthesizer. What hardware or software would I need to turn my C64 into a laptop music studio?

Peter Jim, Brighton

Like the writer above, the first thing you'll need is a MIDI interface. Dave's MIDI kit contains all the necessary bits to link your C64 to a synthesizer, and at £19.95 it provides excellent value for money. Dave's address is in the item above.

Then you'll need software. There are several good packages available for the C64, including Bandin's *Advanced Music System* (£19.95).

Bandin can be contacted at Box 44-24 New England Drive, Glenview, IL 60045 (US) or 01 438 8818.

Amiga sound sampling

Could you please advise me on a good sound sampler for the Amiga £500?

Andy Brown, Reading

Telnicol make a good low-cost model, the Amiga Audio Sampler. Housed in a small box, it is designed to work with most sample software, such as *SoundMaster* and *ProSound*. It costs a mere £24.99 and you can contact Telnicol at Unit 1, 110 Park Street, Bradford BD9 2JG (0574) 891115.

Dave's Amiga Two Samples Studio is more expensive at £69.99, but includes its own software. Also, samples can be saved in WAV format, which is the standard used by many sample packages. Also included is four-track sequencer software.

I own an Amiga and the Amiga Audio music program. The program is excellent, but the number of instruments is rather limiting. I'm thinking of buying a sound sampler to rectify this. Can I use samples from the sampler within the Amiga program? Would I need any additional software?

Anthony Hicks, Kingston

There are several low-cost samplers available for the Amiga, but you'll need extra software to be able to use the samples with Amiga. The £125 Pioneer-based sampler for £125 includes all the software necessary to use the 16-bit samples within Amiga.

Virus fears

I've just bought an Amiga and have heard about an Amiga virus. Could you please explain what this virus is and how I can avoid it?

David Mall, Wokingham

The virus is a short program on a

disk which transfers itself into the Amiga RAM when the disk is used, then tries to corrupt while disks are swapped. However, in fact, it strikes by damaging the base file of whatever file is in the drive, making it impossible to load whatever software is on that disk.

There's little more to say on viruses, and what you need to know is on page 108 of this issue. Suffice it to say, however, that there are several reliable ways of avoiding viruses, and as long as you're careful they don't pose a great threat.

Two more things may put you mind at rest. Firstly, it's very unlikely that a virus will physically damage your computer (though it's technically possible, again, see page 108). Secondly, a computer virus cannot harm humans—yes, some people do believe that!

16-bit miscellany

Will a 1628 RAM expansion card make the Amiga 500 compatible with designs a 1600 requires, and if so where can I get hold of one?

Do any EEP packages are available for the Amiga? I'm through planning a course of West Street Editor for the Amiga?

Is it likely to be a future Amiga software and hardware during 1989, and will there possibly be an AT?

Will software houses take advantage of the AT's extra capabilities and extend capabilities?

Samuel Flanagan, Hereford

It looks like a 1600-based only 1568 RAM, the A500 will already only 11800 software. However, a RAM expansion is necessary to run programs designed for the A1000. Commodore manufacture their own expansion card, the A501, priced at £149.95. You can contact Commodore on 0843 (0438) 770048.

There are few EEP packages available for the Amiga—anyone considering EEP as their main use for a computer is strongly advised to go for a PC-compatible one, as greater expense, one of the Apple family.

Professional Page, a Canadian import coding, £150.99 from TriComputer Software, is one of the most powerful—through now sold at least 1MB RAM to run it (that's where the 6581 card comes in handy). Full specs were given in TQM85. Contact TriComputer Software at 763 18P Dalgrove Road, Basing, London W11 4AB (01) 499-1116.

Microsoft have no firm plans to release *Plan Sheet Editor* on the





Fun with filenames

I sat at Atari's PC112 for producing a non-shut newsletter, writing copy on, and I am constantly having trouble with forgetting the filename of a file which I don't remember for a while. Is there any way to keep an index of the files with some attached query from writing it all down?

Marjan Huisman, Rotterdam

A surprisingly little-known but very useful feature of MS-DOS is the *x* command, which controls the output of a command such as *dir* or *cd* to a text file rather than the screen.

So to get a text file of a floppy-disk directory, simply type *dir x* with the disk in drive A:1 (or a equivalent). Parameters can, of course, be any name up to the usual limit of eight characters before the tilde and thereafter.

You can then view and edit contents on an ASCII file.

Another way to keep track of what's what is to use logical filenames. This calls for a bit of the full stop in particular useful here - you might want to put an asterisk after the first file, then after the first file, then after the first file, etc.

For example, on DOS you would use the *dir* command to see the contents of the disk. If the disk is running MS-DOS or the better similar OSes, we always put the name number as the suffix. This means it's in the file system, meaning it's the second file of information in the file system.

Similarly filenames are essential whenever you've got large amounts of data floating around,

whether the system - who wants to plough through rows of files called *xxxxxx* and *xxxxxx* and *xxxxxx*?

Awed by the magic? Back with the NT Modified by MSX? Pretty confused by PC?

This has been something of an agony recently at Information Week, as I don't know the names of all the new users I've brought, but we have the names of all the users, even the few I don't know. I manually cover.

No need for competing questions to Information Week, TON, PRO Box 10, London, telephone 071 100.

Finally all questions are answered under my name - even if it's a reply to someone else's letter, but it's not really all that bad that we can't give replies by post or phone, is it now?

Correction

Will the real Atari please stand up?

Last issue, TOM Ripon (mainly) published a picture of the Atari ST alongside a story concerning Atari's American branch, Atari America.

In fact, ST manufacturers Atari Corp have no connection with Atari America and are not involved in the lawsuit. We apologise to both Atari for this error, which occurred because of an oversight in our production department.

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5. Reserve Fund	0.00	0.00	0.00	0.00	0.00
6. Other Funds	0.00	0.00	0.00	0.00	0.00
7. Total	100.00	100.00	100.00	100.00	100.00
8. General Fund	100.00	100.00	100.00	100.00	100.00
9. Special Fund	0.00	0.00	0.00	0.00	0.00
10. Capital Fund	0.00	0.00	0.00	0.00	0.00
11. Debt Service Fund	0.00	0.00	0.00	0.00	0.00
12. Reserve Fund	0.00	0.00	0.00	0.00	0.00
13. Other Funds	0.00	0.00	0.00	0.00	0.00
14. Total	100.00	100.00	100.00	100.00	100.00
15. General Fund	100.00	100.00	100.00	100.00	100.00
16. Special Fund	0.00	0.00	0.00	0.00	0.00
17. Capital Fund	0.00	0.00	0.00	0.00	0.00
18. Debt Service Fund	0.00	0.00	0.00	0.00	0.00
19. Reserve Fund	0.00	0.00	0.00	0.00	0.00
20. Other Funds	0.00	0.00	0.00	0.00	0.00
21. Total	100.00	100.00	100.00	100.00	100.00
22. General Fund	100.00	100.00	100.00	100.00	100.00
23. Special Fund	0.00	0.00	0.00	0.00	0.00
24. Capital Fund	0.00	0.00	0.00	0.00	0.00
25. Debt Service Fund	0.00	0.00	0.00	0.00	0.00
26. Reserve Fund	0.00	0.00	0.00	0.00	0.00
27. Other Funds	0.00	0.00	0.00	0.00	0.00
28. Total	100.00	100.00	100.00	100.00	100.00
29. General Fund	100.00	100.00	100.00	100.00	100.00
30. Special Fund	0.00	0.00	0.00	0.00	0.00
31. Capital Fund	0.00	0.00	0.00	0.00	0.00
32. Debt Service Fund	0.00	0.00	0.00	0.00	0.00
33. Reserve Fund	0.00	0.00	0.00	0.00	0.00
34. Other Funds	0.00	0.00	0.00	0.00	0.00
35. Total	100.00	100.00	100.00	100.00	100.00
36. General Fund	100.00	100.00	100.00	100.00	100.00
37. Special Fund	0.00	0.00	0.00	0.00	0.00
38. Capital Fund	0.00	0.00	0.00	0.00	0.00
39. Debt Service Fund	0.00	0.00	0.00	0.00	0.00
40. Reserve Fund	0.00	0.00	0.00	0.00	0.00
41. Other Funds	0.00	0.00	0.00	0.00	0.00
42. Total	100.00	100.00	100.00	100.00	100.00
43. General Fund	100.00	100.00	100.00	100.00	100.00
44. Special Fund	0.00	0.00	0.00	0.00	0.00
45. Capital Fund	0.00	0.00	0.00	0.00	0.00
46. Debt Service Fund	0.00	0.00	0.00	0.00	0.00
47. Reserve Fund	0.00	0.00	0.00	0.00	0.00
48. Other Funds	0.00	0.00	0.00	0.00	0.00
49. Total	100.00	100.00	100.00	100.00	100.00
50. General Fund	100.00	100.00	100.00	100.00	100.00
51. Special Fund	0.00	0.00	0.00	0.00	0.00
52. Capital Fund	0.00	0.00	0.00	0.00	0.00
53. Debt Service Fund	0.00	0.00	0.00	0.00	0.00
54. Reserve Fund	0.00	0.00	0.00	0.00	0.00
55. Other Funds	0.00	0.00	0.00	0.00	0.00
56. Total	100.00	100.00	100.00	100.00	100.00
57. General Fund	100.00	100.00	100.00	100.00	100.00
58. Special Fund	0.00	0.00	0.00	0.00	0.00
59. Capital Fund	0.00	0.00	0.00	0.00	0.00
60. Debt Service Fund	0.00	0.00	0.00	0.00	0.00
61. Reserve Fund	0.00	0.00	0.00	0.00	0.00
62. Other Funds	0.00	0.00	0.00	0.00	0.00
63. Total	100.00	100.00	100.00	100.00	100.00
64. General Fund	100.00	100.00	100.00	100.00	100.00
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1994	1,400	1.4
1995	1,500	1.5
1996	1,600	1.6
1997	1,700	1.7
1998	1,800	1.8
1999	1,900	1.9
2000	2,000	2.0
2001	2,100	2.1
2002	2,200	2.2
2003	2,300	2.3
2004	2,400	2.4
2005	2,500	2.5
2006	2,600	2.6
2007	2,700	2.7
2008	2,800	2.8
2009	2,900	2.9
2010	3,000	3.0
2011	3,100	3.1
2012	3,200	3.2
2013	3,300	3.3
2014	3,400	3.4
2015	3,500	3.5
2016	3,600	3.6
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Toolbox

Products and news to make life bearable

Eureka! Archimedes prints at pals

Archie fax

Okay, so we ain't much in numbers, but it's true — you can now send fax messages to your instant and distant for under \$500, using your Archimedes to replace a fax machine.

An expansion card from Computer Concepts can convert both text and graphics files into fax data receivable by any group 3 fax machine (in practice, the machine at the other end is almost certain to follow the group 3 standard — most models of the day).

All fax images are shown in a window on screen where they can be edited before being sent as a fax file.

The Fax Pack card is available either with a 200 dpi mode per inch (standard) or higher for 300 dpi, thus covering the

Archimedes into a complete fax machine, or without the display for \$375.00.

Computer Concepts, Gadsden Place, New Hempstead, Maryland 20725-6532 ■ (304) 231-1911.

BBC utilities go 32-bit

Computer Concepts, instructions for their very successful flock programs which populate every nook and cranny from its electricity, have converted their Word, Draw, Mail, Chart and Spill Master to disk for the Archimedes. They were formerly only available in ROM format.

Add-on, so the MacPro Fax box alone.



Triple bill for Amiga programmers

Microsoft has released a couple of Amiga programming utilities as much the same time as Microsoft released GFA BASIC for the machine.

First up is version 2 of Microsoft Basic, which is faster and easier to use, allowing access to both the assembler and debugger from the editor. It costs \$29.95, while version 1 has been standard at \$15.

Meanwhile, Microsoft BASIC is being used for its built-in compiler, its support for structured programming, and its full compatibility with JovagBASIC.

Indeed, portability is the name of the game — Microsoft BASIC, which costs \$29.95, is also compatible with Apple BASIC for the II and Microsoft's QuickBASIC for the PC.

Microsoft's GFA BASIC, now coming from ST to Amiga, also supports structured programming — but doesn't include a compiler.

Microsoft, The Old School, Greenfield

Bedford MK43 50B ■ (0474) 738181.
Microsoft, PO Box 68, St. Louis, Missouri 63166-0068 ■ (813) 334-4800.

■ Watch for reviews of both BASICs in next month's Back Bytes.

Modula-2 on the ST

Official tests may rise and fall, but for make no mistake the price of anti-sewer organization is more GAF. Systems Software, a budget house launched last autumn by Alterra, have introduced their offer of CPC, G44, Spectrum and Spectrum.

Previously costing £1.99 from Systems Software, Mini Office 1 includes a word processor, database and spreadsheet with a graphics presentation program. We reckon it may be the cheapest all-in-one package around. Systems Software, Unit 14, Bute Park Industrial Estate, Oswestry, Shropshire CH22 2JN ■ (0977) 791771.

Cheap 24-pin printer from Citizen

Citizen will launch a low-cost, 24-pin printer in the Citizen Computer Show, held in Birmingham on 19/20 February 21-24.

The £400 odd printer will have only the most basic features, but Citizens say the print quality is similar to that of more expensive models.

For a full guide to printers see Back Bytes, 7/24/84.

Citizen, Welwyn Garden City, Herts SG13 7JF ■ (0477) 736133.

Mini Office for mini money

Enter the ST programmers will happily find £19.95 for Microsoft's PTL Modula-2 compiler, included in this package, based on the structured language Modula 2, are

■ The PTL Modula-2 compiler, on which the system is based.

■ A linker.

■ An assembler.

■ A copy of Microsoft's BASIC manual, which lets you automate the production of menus, icons and windows.

■ A module GEM editor.

■ A high-level symbolic debugger.

Costing £99.95, the system is also available for MS-DOS and CP/M machines: Mac, IBM, Windows and OS/2 versions are imminent.

Microsoft, The Old School, Greenfield Bedford MK43 50B ■ (0474) 738181.

ST workbench?

Put your ST on the shelf — with a workstation from Company 55, designed specifically for the ST. A three-view design constructed from tubular steel, it takes the monitor under top lip and the keyboard on the bottom, and also includes a platform for the mouse. The cost? £25.

Company 55 ■ (0474) 29075.

Correcting colour in Degas

Printouts of colour pictures can be a bit of a pain affair — sometimes the printer misinterprets information from the computer, and the colours go awry.

Now Degas offers users a convenient colour printouts using Colours from the Software, a utility which keeps the printed image as close as possible to the screen display.

Pictures are loaded into the Colours program, where the colour codes are automatically converted, then translated and loaded back into Degas after to be printed out. Further details will issue in a future issue.

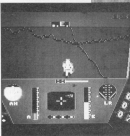
Box Software, 21 Wylegate, Manchester, M14 6PL (0161) 231761.

Rescue for Fractalless

Fractal fractalists should soon have their own magazine. Fractal stops. The proposed newsletter will feature programs for generating fractal graphics on home computers including PCs, you have made requests for particular programs, and great articles. There'll presumably be a fractal page 1 too.

Anyone interested in reading or writing for Fractal Report can obtain the first issue for free from John de Steyn, West Sussex, Sussex, Hampshire, from Cornwall (UK).

■ Much interest in fractals is mathematical, but they're also useful in games. Fractal graphics have been widely used in games by developers such as LucasArts, who made the no longer famous with their The Fractal, Apogee and the 3D studio, starting in 1990.



Computerised exam help

There's no need to pack away your computer as the GCSEs approach — it can actually save you a great deal of time.

Software available includes geography, history, French, German and Spanish for Spectrum (convertible and +3 disk), CPC, BBC, Amstrad PCW and PC-compatibles, with conversions due soon for the ST.

Presumably, C44 and Amiga owners are so busy they don't need to bother either way.

Prices range from £4.95 to £19.95, depending on format. For a free 30-page catalogue contact Knowledge Program, (convertible, Redbridge) 071 488 0000 (no stamp required) or 01291 1942.

graphics.

PRICE: No longer available new, but sometimes available as "free" software when buying an Amiga. Or borrow it. **PRODUCER:** Electronic Arts, address under Digital Arts.

Amiga power

PACKAGE: DeluxePaint II.
SYSTEM REQUIREMENTS:

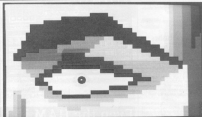
Amiga 1.2 or HMD.

SCREENS: Four modes are available: 320x200 (32 colours), 640x400 (16 colours), 640x200 (16 colours) and 640x400 (16 colours).

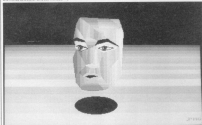
BEHAVIOUR: Fun built in brush shapes and tools. Rectangular customised brush-grip. Customised brushes can be rotated through any angle, flipped horizontally or vertically, bent through horizontal or vertical planes, and stretched to any size.

DeluxePaint II also includes a powerful perspective command. A customised brush can be rotated through 360° , y and z coordinates to create a new three-dimensional object.

BLACK TOP LINE: Even the same icons and menus as **DeluxePaint**, but with addi-



Sam Thayer is a blow-up of one of the eyes from the Marlyn pic. The picture was constructed and the pixel extracted using the cursor command. Sam Thayer was drawn on DeluxePaint.



The Marlyn picture was directly tracing a rough outline into acetate and sticking this on the TV screen, as a guideline. The face was then divided into segments which were individually shaded using a horizontal pencil. Marlyn was drawn using DeluxePaint II.

tional commands. Tutorials have been included in the manual but it's easy to get lost in some of the detailed descriptions of functions.

LSP: There are several powerful commands: position x , y , shades and fill an area at the same time, while zoom, pan and zoom all speed up the process of colouring.

DeluxePaint II is now sold with **DeluxeFont**, a revolutionary layout system (7000000).

PGM 4-1180: Certainly one of the best values available for the Amiga. After a little practice **DeluxePaint II** is very easy to use. Flicking through menus of speed soon becomes second nature. The commands are very powerful, and once mastered they save a tremendous amount of drawing time in creating complex effects.

PRICE OF 199-05.

PRODUCER: Electronic Arts, address under Digital Arts.

Picture processing

PACKAGE: DeluxePaintable.
SYSTEM REQUIREMENTS:

Amiga, 1.2 or HMD.

SCREENS: Several resolution modes are customised for, ranging from 320x200 up to 640x400.

The **4000's** Delta-HyperPaint mode is an option on some resolutions, effectively doubling the maximum colour range to 64 by displaying two banks of 32 colours. The user specifies the contents of the framebuffer, while the second bank repeats the same colours but displayed at half their brightness.

HMD mode is also available.

BEHAVIOUR: 16 pencil brush sizes and shapes. Rectangular and irregular customised brush-grip. Customised brushes can be flipped vertically and horizontally, rotated through any angle or rotated to any size.

BLACK TOP LINE: Experienced users of 15-bit art utilities will have no trouble operating **DeluxePaintable**. First-time artists will have to learn the functions of each icon, but there are notes to guide.

The manual is generally good except when it comes to explaining **HMD**. And noncommercial types may feel late of bit images a little confusing.

LSP: **DeluxePaintable** includes three separate programs: Paint, Colour and Pattern.

Pattern is a logical system and printer driver which allows patterns to be printed out at any size. **Colour** is a colour specification program; pictures can be changed from one display mode to another and elements from several pictures combined while the colour palette is modified.

PGM 4-1180: **DeluxePaintable** is a complete picture-processing package, so some of the options are useless unless you own the hardware to exploit their facilities. For instance, the **Pattern** program is largely redundant unless you have a high-quality printer.

The **Paint** program is good but not outstanding. All the basic functions are covered, but there are some very powerful commands such as zoom x , y , and zoom.



*Something evil was created in **Black** and **White** on **Pattern**. Paint, making colour give out of the brush and zoom commands.*

to release the package is particularly suited to GDT applications or the research of digital graphics.

PRICE \$100 US.
PHONE 416-291-1241 Electronic Arts, address under Digital Arts.

Best for brushes

PALETTEMASTER Paint.
SYSTEM REQUIREMENTS: Amiga, 1.2M RAM, mouse, VGA is required to enable resolution and functions.

SCREEN MODE: mode. Several screen sizes are also supported.

BRUSHES: Eight preset brush sizes and shapes. Rectangle and irregular customised brush (gib). Customised brushes can be applied horizontally and vertically, rotated through any angle and moved.

Other Paint-like features: Includes some other essential brush-control commands. Their default the brush size is 2-0 pixels; the degree of feathering is set by moving the mouse. Allow to wrap the brush outside the screen. 3-0 shapes each in 4 tone, or any customised feathered shape.

How details the brush through one of several displays, and 1-1 redraws the brush on a 2-0 plane which is positioned in 2-0.

PALETTE COLOUR: The manual is minimalist - some functions are complicated, but they're covered in such depth and detail that even those that using them is very simple.

EDIT: Very powerful brush commands, and up to 1,000 colours maximum.

FILE/GAUGE: The list of functions is impressive. The brush menu, in particular, has been developed to suit a high level that creating outstanding effects in simplicity itself. In it you can do a lot of brushes in your pictures in the ability to copy.

The only drawback is RAM. It's not always very easy to use and can result in some pictures (on screen) if you're not careful when defining your base colours.

PRICE \$100 US.

PHONE/ADDRESS: MicroMillions, PO Box 3470, Canada, Alberta, Canada T1M 3A4, (403) 241-1001 • 1-800-385-3710.

Coordinated colour

PALETTEMASTER Paint.
SYSTEM REQUIREMENTS: Amiga 512, 512K RAM.

SCREEN: There are four screen modes in base resolution you can have 128 512 or 1,024 colours, but medium resolution allows only 32.

This is a big improvement on the 21's normal colour capability of 16 colours in low resolution and four colours in medium resolution.

The new screen modes are created by specially developed 'realistic colour' routines in the program, which store the screen into areas, each with their own palette. In the case of 128-colour mode the screen is divided into eight areas, each with a different 16-colour palette.

But operations must be made. The 'realistic' colour routines take up extra processor time: in 512- and 128-colour modes this is only 10%, but can rise to 30% in 512- and 1,024-colour modes. Obviously graphics that take up 90% of the processor time cannot be used in



The Text Control menu from Quantum Paint overlaid over the top of the main window screen.

price:
AMIGA/Amiga 12 preset brush shapes and sizes. Rectangle and irregular cus-

tomised brush grids. Customised brushes can be repeated anywhere on the screen.

4-4 GDT GDT 1,024 colours mode is also. All commands are located in a separate screen from the main area. Defining the extended palette presents no problems.

EDIT: The new colour modes are available. Quantum Paint's editing features also include an animation program to create moving sprite sequences. **TEAM Q/128 Colour:** In what this program is about, a little more planning of your artwork is necessary to determine where you will need particular colours, but in practice it's far easier to use than what is in the Amiga. However, an other extended program has been set down by Quantum Paint's team.

When Quantum Paint is improved, Easoft will supply the new version to registered users for a \$15-50 fee.

PRICE \$124 US.

PHONE/ADDRESS: Easoft, 444 Stanley Street, Seattle, WA 98104 • (206) 461-1700.

Even the HAM is a bit plane

Build and Modify (HAM): is a screen mode on the Amiga which allows you to modify a 4-bit colour table displayed on screen to a full image, and its moving graphics.

Normally, however, the image is low resolution and high resolution resolutions display over 12 colours on screen. Each is a range of 4,096. These colours are made up by combining red, green and blue values (represented in 8-bit) in different amounts.

The main idea of the HAM screen mode is the planes, which are the four of memory low, each bit representing one pixel on the screen. Each bit is on or off.

However, if there were only one bit plane, there could only be two colours on and off, or black and white. But if there are four planes (0-1-2-3) you can have the whole picture for one of four colours, represented by a 4-bit value: 0-1-2-3, 0-1-2-3, 0-1-2-3, 0-1-2-3.

There are planes could eight possible colours, but mode 10, and mode 11, a 12-colour mode. In 12-colour mode, the Amiga has four bit planes (0-1-2-3) and each plane has 16 colours (0-1-2-3-4-5-6-7-8-9-10-11-12-13-14-15).

Building planes: The first, you've got to have a colour represented by the four bit planes. A million Gold P 0-1-2-3 - now how does the Amiga store that into a coloured pixel structure?

Well, the actual definition of the colours are stored in the 12 colour registers of HAM, and a quick, randomised, randomised colour table. The planes are then set up with any register between 0 and 11, inclusive. This sets the machine into a colour register to read, in these colours the pixel using its normal screen-colouring method. Quantum's will quickly say

(that, in each bit plane is either on (1) or off (0), this can be thought of as the value of the plane is, meaning that if by 0, then the colour is black, and if by 1, then the colour is white, and then adding together the products, then that is the colour of the pixel. Any other...)

The HAM mode

Basically, HAM can only display all 4,096 colours by using the 12-bit composition of the previous pixel can the second is done this by using four bit planes to give a value between 0 and 15 (0-1-2-3-4-5-6-7-8-9-10-11-12-13-14-15), and then reading another random plane to find out whether that value takes a normal colour or a HAM colour.

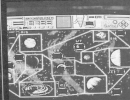
If it's for a normal colour, there are of 16 colour registers. These colours are selected in the way shown above. But if there are four colours, then that's for a HAM colour, a different colour register is used. One of the three

RAM components control even those that are not yet displayed, and replaced by a colour table colour.

If the colour colour is to replace the previous colour, HAM mode will colour the screen with that and that colour from the previous pixel, the colour colour of the colour register.

This is the advantage, and the disadvantage, of HAM. Because each pixel can have any value of 16 base colours, the total number of combinations is 4,096 (16 x 16 x 16). But as only one of the three colour channels can change one colour, it can take several pixels to change the colour of one colour completely different one.

The complete list of HAM mode makes it possible to move graphics, and to good going from one mode when using HAM is very important to define the 16 base colours carefully.



In fact, when the HAM mode is used, the image is built up from a single pixel. The image was displayed in 'very long' in HAM mode.

ONALYR PALETTE 16 colours and shades.
SOUND 3-channel 8-voice sound chip which outputs through the monitor TV. The 10811 SBO chip (Sound Interface Controller) is one of the most sophisticated sound chips in a 16-bit computer.
VIDEO TV works in all modes. DRI has a composite video port, C18VC160 built-in RGB ports for an 80-column display.

SOFTWARE FORMAT Tape or 5.25-inch disk (1280 meg). Two external 1.25-inch drives are examples of those that can (Commodore — the C1541 (format) to 1400, and the C1541 (format) to 1400). These disks vary cheap-but-easily changed.

PORTS RGB (C18VC160), composite video (C18V), two parallel ports, cassette, TV expansion port, serial (standard), user port.

SOFTWARE The Commodore 64 is an old computer with years' worth of games and utilities, many imported from America. Many users, however, software likely to flow for some years yet. IBM chips are C18VC160 allows it to run software written for CPM operating systems (as found in Amstrad PC1616, 'Dyna', PC1616, and CPM1616, and Spectrum +3).

8-BIT

ACORN BBC

NOTE The BBC has appeared in many models: BBC A, BBC B, BBC B+, BBC Master Series, and BBC Master Compact.



Only the last two are now available. Listed below are the specifications for the BBC Master Compact.

DISPLAY 16-bit, the BBC range has chosen items produced by Sharp, but one is to be included. But when the British Government decided to put computers in schools, they called on Acorn to provide a specification for manufacturers to work to — and Acorn got the contract.

PRICE Master 128 (1850.00), Master Compact 128 (1750.00) or (1710.00) with TV monitor, 1400.00 with more monitor, 1600.00 with colour monitor.

MEMORY 128K.

PROCESSOR 8085 8-bit 8085 C1.

PERIPHERALS Serial modem, tape,

ing from 108000 (16 colours) onwards to 108000 (black and white).

VIDEO 1-channel 8-voice output through internal speaker.

VIDEO Composite video, RGB, optional TV monitor available.

SOFTWARE FORMAT Cassette and disk.

PORTS 50-way expansion port, tape-to-tape port, Centronics parallel, RGB (Shugart standard) bus port interface.

NOTE The BBC range has a wide range of educational software and applications, because until recently the BBC was the most common computer in British schools (it's now being overtaken by PC-compatibles and, occasionally, 286 and 386). It has games and apps.

MSX-N

NOTE MSX and its successors, MSX 2 and MSX 2+, are not brand names of actual machines — MSX is a compatibility standard, or a set of rules for designing computers, developed by Japanese computer big-name in the early 1980s.

The situation is a lot like that of PC-compatibles: many manufacturers have produced MSX machines, but mainly the same software runs on them all. The most famous MSX manufacturers are Sony.

PRICE Prices start from about £380 and rise according to model. The MSX 2+ (see 108000 series) is not yet available.





Guess:

Who supplied the Games Machine with their PC Engines and software for the next months review?

Guess:

Who tied up the deal that makes this amazing console and its supporting software available in the United Kingdom?

Guess:

Who'll be telling you a lot more next month?

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- Nature inspired algorithms or the black box

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Playing the waiting game

Half the hyped-up products may never exist at all, says Robin Candy

In late 1987, ads appeared for *Attack Of The Mutant Super Fish-Eating Chalkmen From Mars* starring *Space The Dog*—the first game from Matthew Smith (GSM), who'd been three years, presumably for review deadlines everywhere, in the game never appeared and we were all spared the *ATTACK OF THE MUTANT SUPER FISH-EATING CHALKMEN*.

Perhaps that was no great loss to mankind. But we're all over the ads for new games and new machines which will change the face of computing and improve our very existence—if they turn to be believed, self-actualization can be yours for only \$19.99. True, there may be delays along the way, but it's worth having it's worth waiting for, right?

Unfortunately, delays have become a way of life in the video world—sometimes the delays are of infinite length and the product never appears at all. And did it ever rain in the first place? It's become almost accepted that if you have a good idea one heavy evening you immediately announce that it will be available on all major formats from Monday next, and ride in a little publicity. No need to actually produce it...

Probably the most infamous fall-out of this kind came from Imagine, before it was bought by Disney. Back in 1984, Bandersnatch and Apocalypse were billed as the two most original games conceived (you betta believe it). Enhanced by a hardware add-on, they would change the face of gaming as we know it.

It later transpired, after Imagine had crumbled, that despite the glossy advertisements claims there was very little of the megagame to show. Apocalyp had progressed no further than a piece of paper, and though programming had begun on Bandersnatch it was far from finished.

Imagine weren't the only software house who tried to change the face of gaming with a hardware add-on. In 1989, Milken Games launched the Mikro-Plex, a device which increased the Spectrum's memory to 64K by overloading the ROM. Several games were planned but only one ever saw the light of day. *Shadow Of The Unicorn* was poorly received by both reviewers and public, and the Mikro-Plex and all follow-up games were scrapped. Even when a wonder product does appear, it may fall flat.

Revolution cancelled

In the battle of the consoles, the Atari One was almost contemporary the opposition. RISC (Reduced Instruction Set Computing) processing, 512x512 screen resolution,

built-in MIDI ports, a video/mixer chip all for around £200? It's certainly looked impressive on paper.

As of paper, in fact, at least two major magazines with 'compare' as the annual word of their title devoted glossy pages to rave reviews. TGM thought it sounded great, too, but we waited last year in TGM9000 that it 'won't be on the shelves this Christmas'.

Of course it wasn't, and though Atari Technology say it's still on the cards, it seems no manufacturer has been found yet. To Atari's credit, they did bite of the hyping; the man left to the press, most guilty party in the merry-go-round of incredible nonhappening resolutions.

Interesting aside: the Atari One's designers formerly worked at Amiga Research on the Liki, the mythical 'super Spectrum', which also looked good on paper until it too materialised. So Atari has little had long been known for selling himself into trouble with unworkable promises; in his case, the problem was clear, that software technical difficulties arose.

Atari are more guilty than most at promising product and never delivering. The 2500, ST was originally planned as a rival to the Spectrum and the C64 but was scrapped very early on. And we're still waiting for the Atari CD-ROM and ST Plus. Don't put too much money on the ST console appearing this summer as scheduled, either. Or, alternatively, the portable ST on many Atari machines are shown to selected software and revealing big game for the major computer shows, just on the shelf, and shown around again the following year.

One-part trilogy

Back to games. Gargyle Games's *Masters* was critically acclaimed and well-received by the public, so two follow-ups were planned to complete a *Days Of Earth* trilogy: *Forma* and *Gall*.

Neither ever made it to the shops, because Gargyle felt that the financial rewards weren't going to be great enough to justify the development time. So they launched the *Master Than Light* label and concentrated on arcade games which took much less time to program.

Legal disputes are another threat. *Amiga* and *The Great Game Store*, two excellent games from Rainbow Arts/US Gold, that didn't make it to the shops because of legal entanglements. Both were heavily advertised and both got rave reviews—thus it, all the while started flying. *Electric Dreams* appeared in Amiga, setting

it was too similar to their forward 8-Type, while Nintendo forced US Gold to withdraw *The Great Game Store* because it resembled *Super Mario Bros*. However, neither 8-Type nor *Super Mario Bros* can be described as original...

US Gold were too quick off the mark with another announcement when they proudly proclaimed in 1987 that James Dean, Marilyn Monroe and Charlie Chaplin were soon to be major computer games. Only the Chaplin title appeared, last year, and the software house quickly admitted that after acquiring the license they'd decided *Dean* and *Monroe* were unsuitable for publication.

This catalogue also keeps teachers only a few of the software and hardware world's countless broken promises. All around campaigning families with the problem; users had to wait so long for the latest version of Lotus Development Corp's spreadsheet 1-2-3 that headlines saying '1-2-3' became a running joke.



Waiting is half the fun

©1990 Charlie Chaplin in City Lights ©1990/1991 New Line

But it was the joke to users who desperately needed it to improve their business, and the hype around games and games machines is no joke either—if only because it can harm the user. Who knows what they should really want but can't afford if half the products advertised are pure fantasy?

■ Next month in TGM: 12-page *Controversy* pull-out section plus the astounding 64-bit parallel-processing supercomputer in an easy-to-assemble 64V kit—no soldering experience required!

Direct specifications may vary according to availability of components.

The Games machine

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music-maker (agent, producer, 40 songs, £1000 or more for working class, £1500 for London-based, London, Phoenix 1992).

John Hall (left) with one of his students of guitar including John Stone, and under quarantine and bonded with neighbors, all for 140000 members. *Amiga*, Contact: 1000, 1100, 1200, 1300, 1400, 1500, 1600, 1700, 1800, 1900, 2000, 2100, 2200, 2300, 2400, 2500, 2600, 2700, 2800, 2900, 3000, 3100, 3200, 3300, 3400, 3500, 3600, 3700, 3800, 3900, 4000, 4100, 4200, 4300, 4400, 4500, 4600, 4700, 4800, 4900, 5000, 5100, 5200, 5300, 5400, 5500, 5600, 5700, 5800, 5900, 6000, 6100, 6200, 6300, 6400, 6500, 6600, 6700, 6800, 6900, 7000, 7100, 7200, 7300, 7400, 7500, 7600, 7700, 7800, 7900, 8000, 8100, 8200, 8300, 8400, 8500, 8600, 8700, 8800, 8900, 9000, 9100, 9200, 9300, 9400, 9500, 9600, 9700, 9800, 9900, 10000.

Cyromech, IBM compatible PC or compatible hardware plus disk drive, touch screen keyboard, 2 diskette drives, mouse or pointer, Cyromech's patented technology. Requires CD-ROM Internet® High Speed Modem (not included) and can be run on Windows 95.

[illegible]

Sege games consists with 5 games including Hang On, Space Harrier, Street Fighter, Mortal Kombat and Double Dragon. All these are great with only 15000. (Mortals 20000, 34000, same here)

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February 24 (4) *Just before 10 a.m.*, the person with the gun, as he walked past the car, told her "C'mon, I'm not kidding."

2004 Star Trek, books of genre (the *Star Trek* Dragon and book series, lots of magazines, 1 review, 1994, excellent reviews, and the book *The Star Trek* 2004-2005: A 30th Anniversary Book

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Amiga games. Original: Ports: Pac-man, Star Wars, Simulated Real Chess, Star Wars, Star Wars: Empire Wars, Quest II, Star Wars, Football, 100% Java 1, Port 2, Suspended, Hyperball, Condemn, Star Wars, Madrunner, 100% Java Condemn (ported), 100% Java Condemn (ported).

Alert 826 STP4 you may find some suspicious (and they certainly mean suspicious) and get some very good feedback, make the C&D or related other things that are good.

Experiments with the simulator were not very good conditions with the class period, typically, 45 minutes. I have considered and will consider future projects. Please email me at john@johnmccall.com

IBM The computer giant, IBM, is computer giant that covers everything. Models included: Model Number 486, 1.25m ratings, over 12,000,000 original software, over 40 users, 1 application, medium, fast for 1990-1991. Software on 486 and 486 systems (software, software, and 1.25m).

Keywords: [XO] brand name with misleading plus label original advertisement, product change, information, emotional and moral persuasion, fast food, nutrition, green-colored food, [XO] after name

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The Games machine

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■ It's mega, it's from Japan, and it's arrived! Way back in the mists of time (TGM008 to be precise), TGM was the first to bring you exclusive news on the remarkable all-singing all-dancing console from the land of the rising sun – the PC Engine.

■ In the computer entertainment industry, when the going gets tough, the tough get out. Neil Croucher asks leading figures why they left when they did.

■ From classical to pop, TGM investigates the use of micros in the professional music studio.



■ Kpopw! Thwack! Ooer! From high-selling magazines to the computer screen, TGM delves into the wonderful world of comics.

■ Games: the full reviews

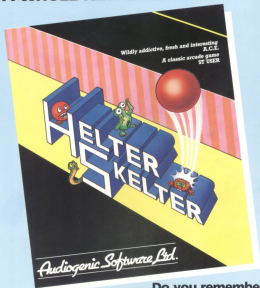
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